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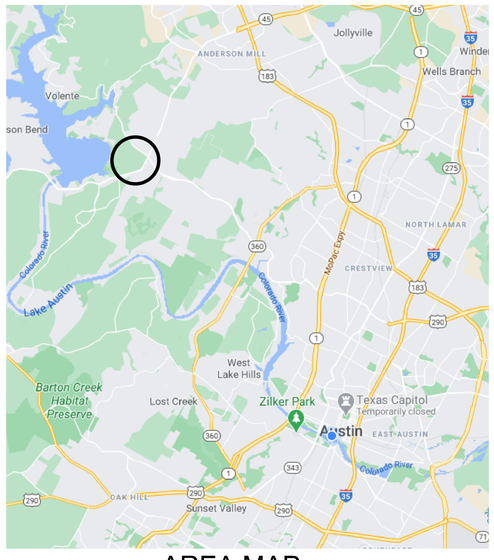
DRAWING INDEX

CIP ID: 6683.031
SOLICITATION IFB II: CLMC856
ISSUED FOR CONSTRUCTION

OWNER: CITY OF AUSTIN
SPONSOR: TIGER DAVIS, P.E.,
FACILITY ENGINEER - AUSTIN WATER,
(512) 972-2205
PROJECT MANAGER: GABRIEL CASTANO, P.E., PMP
CAPITAL DELIVERY PROJECT MANAGER
(512) 974-2937



AREA MAP

HANDCOX WATER TREATMENT PLANT PROCESS BUILDINGS
HVAC IMPROVEMENTS PROJECT
6800 N FM 620 Austin, Texas 78726

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

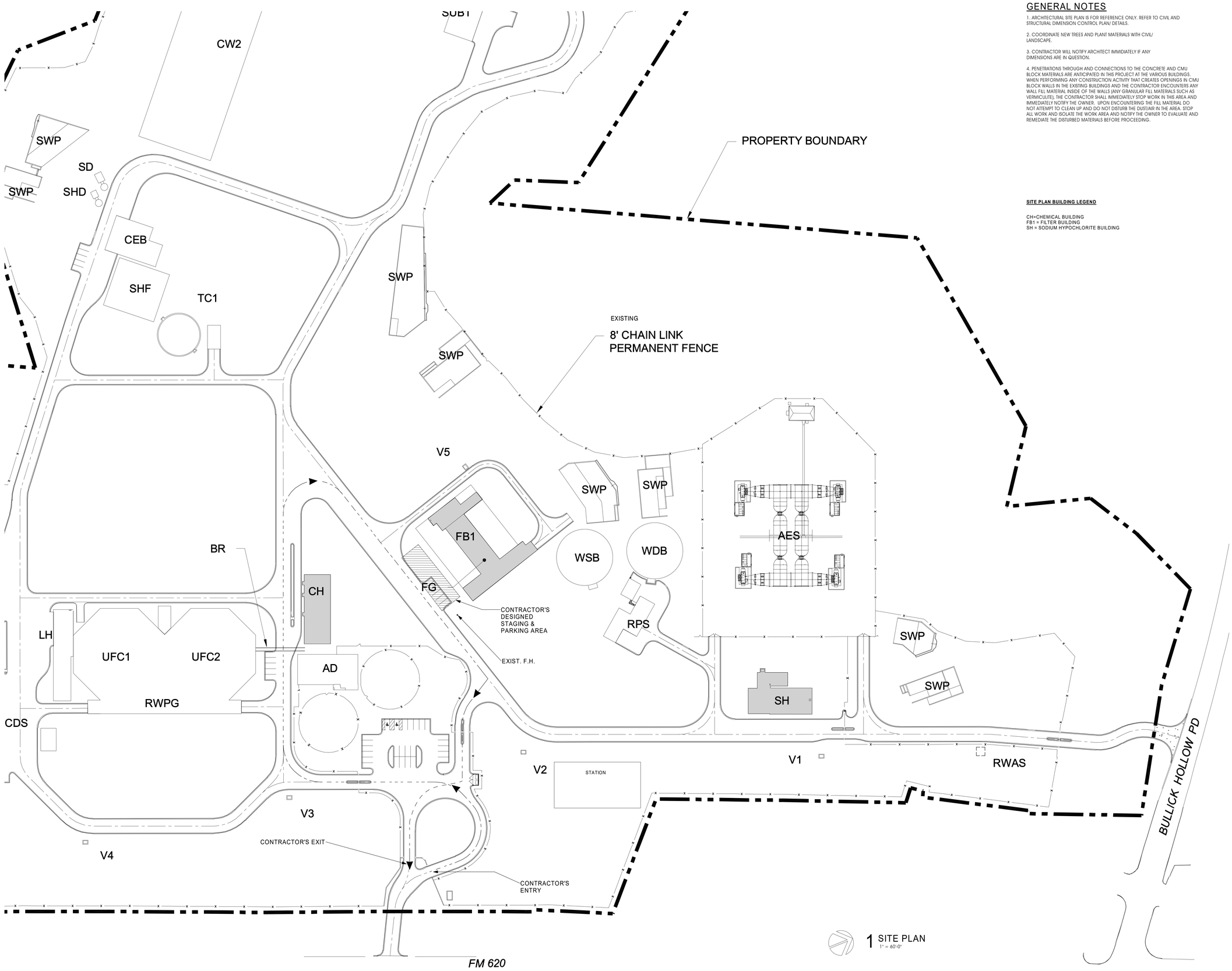
REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS
Firm Registration No. 15868
Page Southerland Page, Inc.
STATE OF TEXAS
BREANNE D. HANSON
115706
LICENSED
ARCHITECT
19 MAR 2021

COVER SHEET
AND
SHEET INDEX

DRAWN BY	CHECKED BY
HR	BH
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

G-001
SHEET NUMBER



1 SITE PLAN
1" = 60'-0"

GENERAL NOTES

1. ARCHITECTURAL SITE PLAN IS FOR REFERENCE ONLY. REFER TO CIVIL AND STRUCTURAL DIMENSION CONTROL PLAN/ DETAILS.

2. COORDINATE NEW TREES AND PLANT MATERIALS WITH CIVIL/ LANDSCAPE.

3. CONTRACTOR WILL NOTIFY ARCHITECT IMMIDIATELY IF ANY DIMENSIONS ARE IN QUESTION.

4. PENETRATIONS THROUGH AND CONNECTIONS TO THE CONCRETE AND CMU BLOCK MATERIALS ARE ANTICIPATED IN THIS PROJECT AT THE VARIOUS BUILDINGS. WHEN PERFORMING ANY CONSTRUCTION ACTIVITY THAT CREATES OPENINGS IN CMU BLOCK WALLS IN THE EXISTING BUILDINGS AND THE CONTRACTOR ENCOUNTERS ANY WALL FILL MATERIAL INSIDE OF THE WALLS (ANY GRANULAR FILL MATERIALS SUCH AS VERMICULITE), THE CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THIS AREA AND IMMEDIATELY NOTIFY THE OWNER. UPON ENCOUNTERING THE FILL MATERIAL DO NOT ATTEMPT TO CLEAN UP AND DO NOT DISTURB THE DUST/AIR IN THE AREA. STOP ALL WORK AND ISOLATE THE WORK AREA AND NOTIFY THE OWNER TO EVALUATE AND REMEDIATE THE DISTURBED MATERIALS BEFORE PROCEEDING.

SITE PLAN BUILDING LEGEND

CH=CHEMICAL BUILDING
FB1 = FILTER BUILDING
SH = SODIUM HYPOCHLORITE BUILDING

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	03/19/21

PROFESSIONAL SEALS

REGISTERED ARCHITECT 18237 STATE OF TEXAS

03/19/21

SITE PLAN

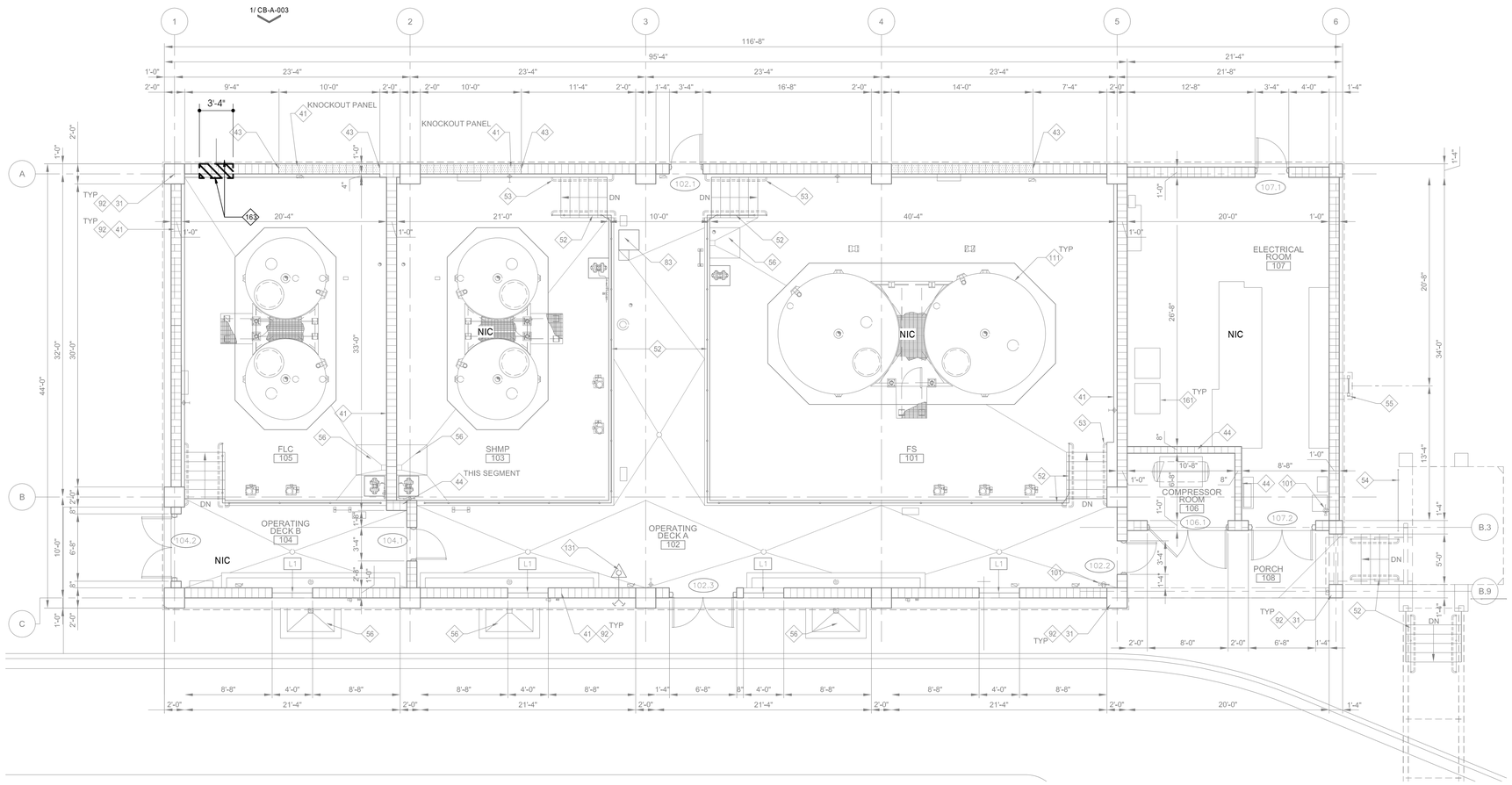
DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

G-002

SHEET NUMBER

◇ DEMO KEYNOTES

31. EXISTING CONCRETE STRUCTURE
41. EXISTING CMU 12 IN NOM BED WIDTH
43. EXISTING CMU CONTROL JOINT
44. PARTIAL HEIGHT 8IN CMU WALL W/ GYP ASSEMBLY ABOVE
52. EXISTING FRP GUARDRAIL SYSTEM: TOP-MOUNT TYP
53. EXISTING FRP HANDRAIL SYSTEM: WALL MOUNT TYP
55. EXISITNG METAL LADDER
56. EXISITNG BAR GRATING PER STRUCTURAL
83. EXISTING FLOOR ACCESS DOOR - LIGHT DUTY
92. EXISITNG WATER REPELLANT TYP. ON CMU & SLOPED CONC. SILL
101. EXISTING FIRE EXTINGUISHER-SURFACE MOUNTED
111. EXISTING PROCESS MECHANICAL EQUIPMENT
131. EXISTING FIRE PROTECTION EQUIPMENT
151. EXISITNG ELECTRICAL EQUIPMENT OR ACCESSORY
163. REMOVE EXISTING CMU FOR NEW LOUVER OPENING
166. REMOVE HARDSCAPE & PREP FOR NEW CONCRETE
167. PREP AREA FOR NEW CONCRETE PAD



1 CHEMICAL BUILDING - DEMO FLOOR PLAN
3/16" = 1'-0"

TRUE NORTH PLANT NORTH

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HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

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0	ISSUED FOR CONSTRUCTION	03/19/21

PROFESSIONAL SEALS

REGISTERED ARCHITECT 16237 STATE OF TEXAS

03/19/21

CHEMICAL BUILDING
DEMO FLOOR PLAN

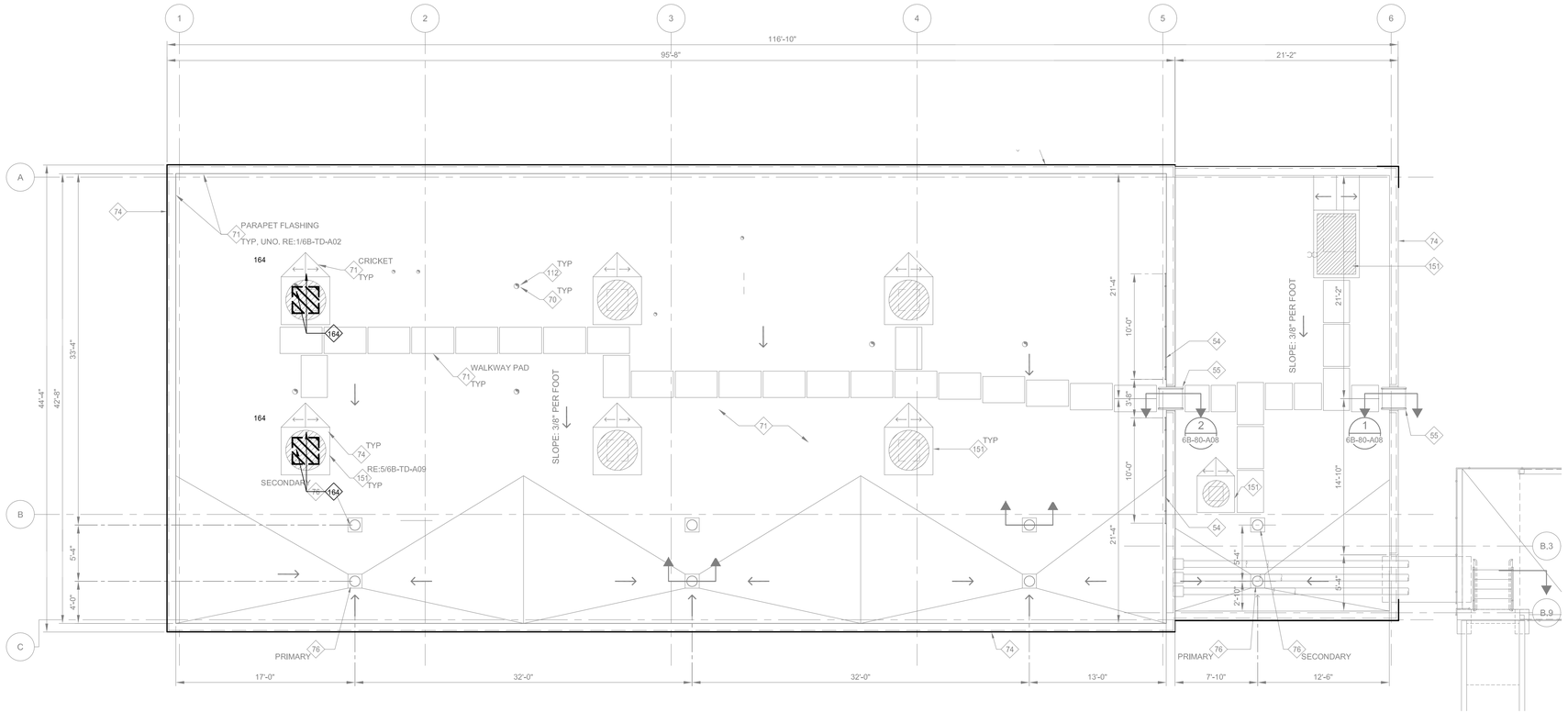
DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

CB-A-001

SHEET NUMBER

◇ DEMO KEYNOTES

53. EXISTING FRP HANDRAIL SYSTEM: WALL MOUNT TYP
54. EXISTING FRP HANDRAIL SYSTEM: SIDE MOUNT TYP
55. EXISITNG METAL LADDER
56. EXISTING BAR GRATING
70. EXISTING ROOF PENETRATION
71. EXISTING ROOF SYSTEM OR ACCESSORY
72. EXISTING EXTERIOR WALL PANEL OR ACCESSORY
74. EXISTING BENT METAL TRIM
112. EXISTING PROCESS MECHANICAL ROOF PENETRATION
151. EXISTING HVAC EQUIPMENT OR ACCESSORY
164. REMOVE EXISTING MECH. EQUIP. / EXISITNG OPENING AND CURB TO REMAIN. RE: MEP



1 CHEMICAL BUILDING - DEMO ROOF PLAN
3/16" = 1'-0"

TRUE NORTH PLANT NORTH

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REVISION HISTORY

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PROFESSIONAL SEALS

REGISTERED ARCHITECT 78237 STATE OF TEXAS

03/19/21

CHEMICAL BUILDING
DEMO ROOF PLAN

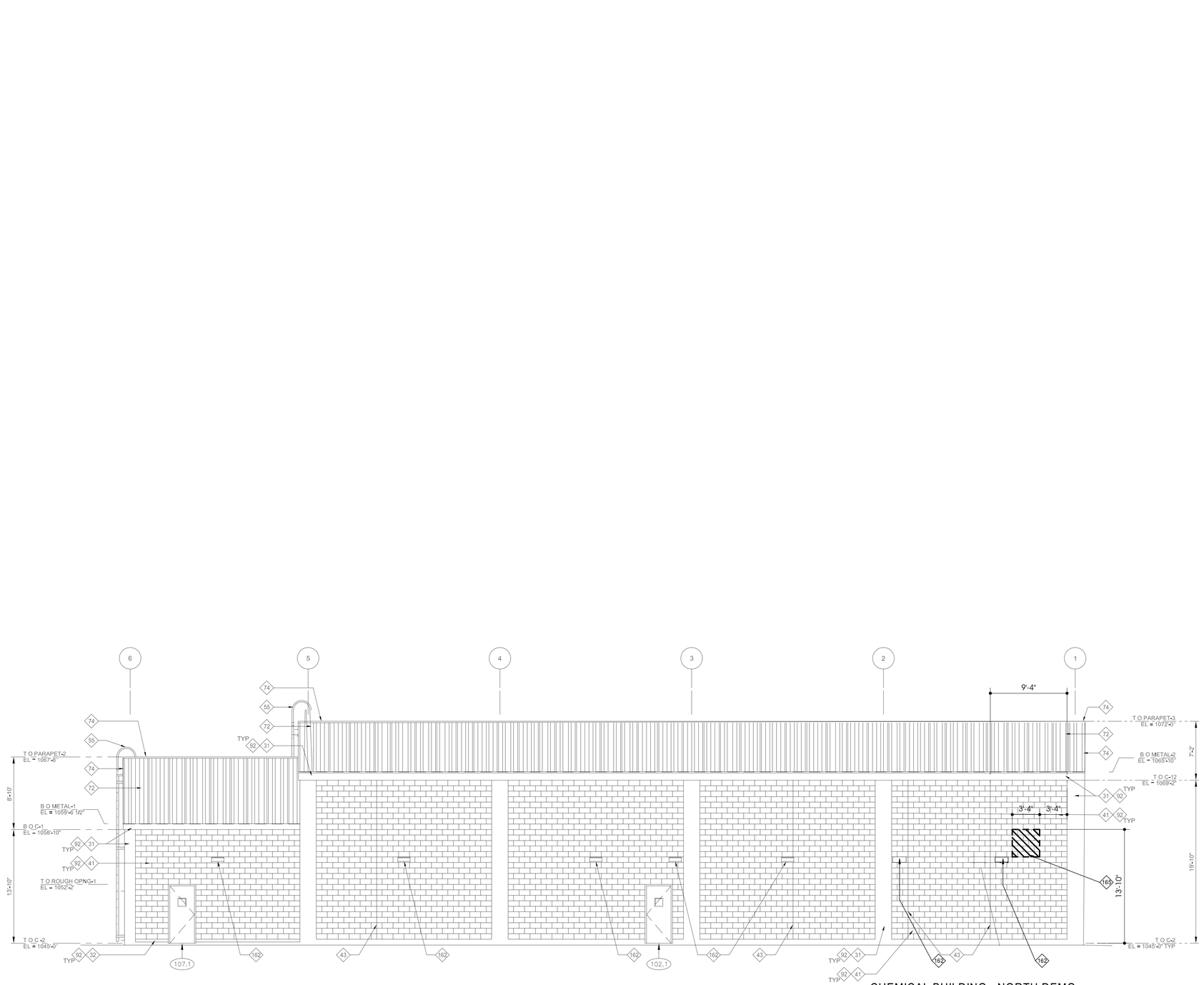
DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

CB-A-002

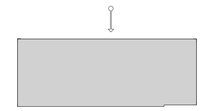
SHEET NUMBER

◇ DEMO KEYNOTES

31. EXISITNG CONCRETE STRUCTURE
32. EXISITNG CONCRETE CURB OR PAD
41. EXISTING CMU-12IN NOM BED
43. EXISITNG CMU CONTROL JOINT
55. EXISITNG METAL LADDER
72. EXISTING EXTERIOR WALL PANEL OR ACCESSORY
74. EXISTING BENT METAL TRIM
92. EXISITNG WATER REPELLANT TYP ON CMU & SLOPED CONC SILL
162. EXISTING EXTERIOR LIGHT FIXTURE
165. REMOVE EXISTING CMU FOR NEW LOUVER OPENING
166. REMOVE CMU AS REQUIRED FOR NEW LINTEL AND SILL COURSING



1 CHEMICAL BUILDING - NORTH DEMO ELEVATION
3/16" = 1'-0"



KEY PLAN

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	03/19/21

PROFESSIONAL SEALS

REGISTERED ARCHITECT *6237 STATE OF TEXAS

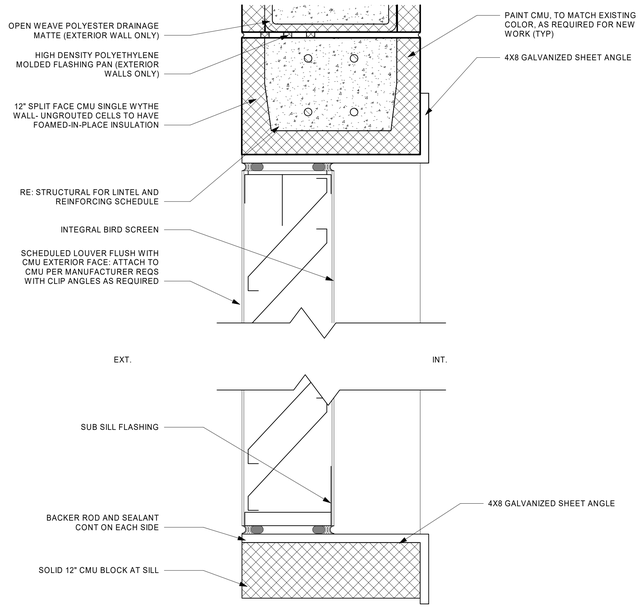
03/19/21

CHEMICAL BUILDING
DEMO ELEVATION

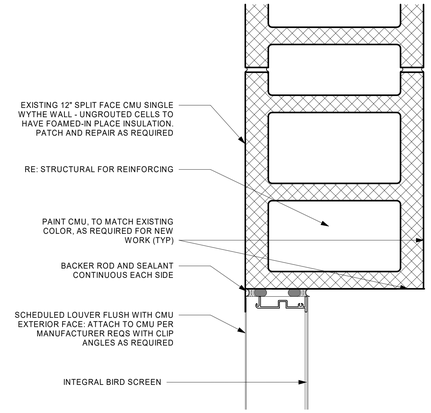
DRAWN BY GG
CHECKED BY FG
PROJECT NUMBER 20005
PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC
DATE 03/19/21

CB-A-003

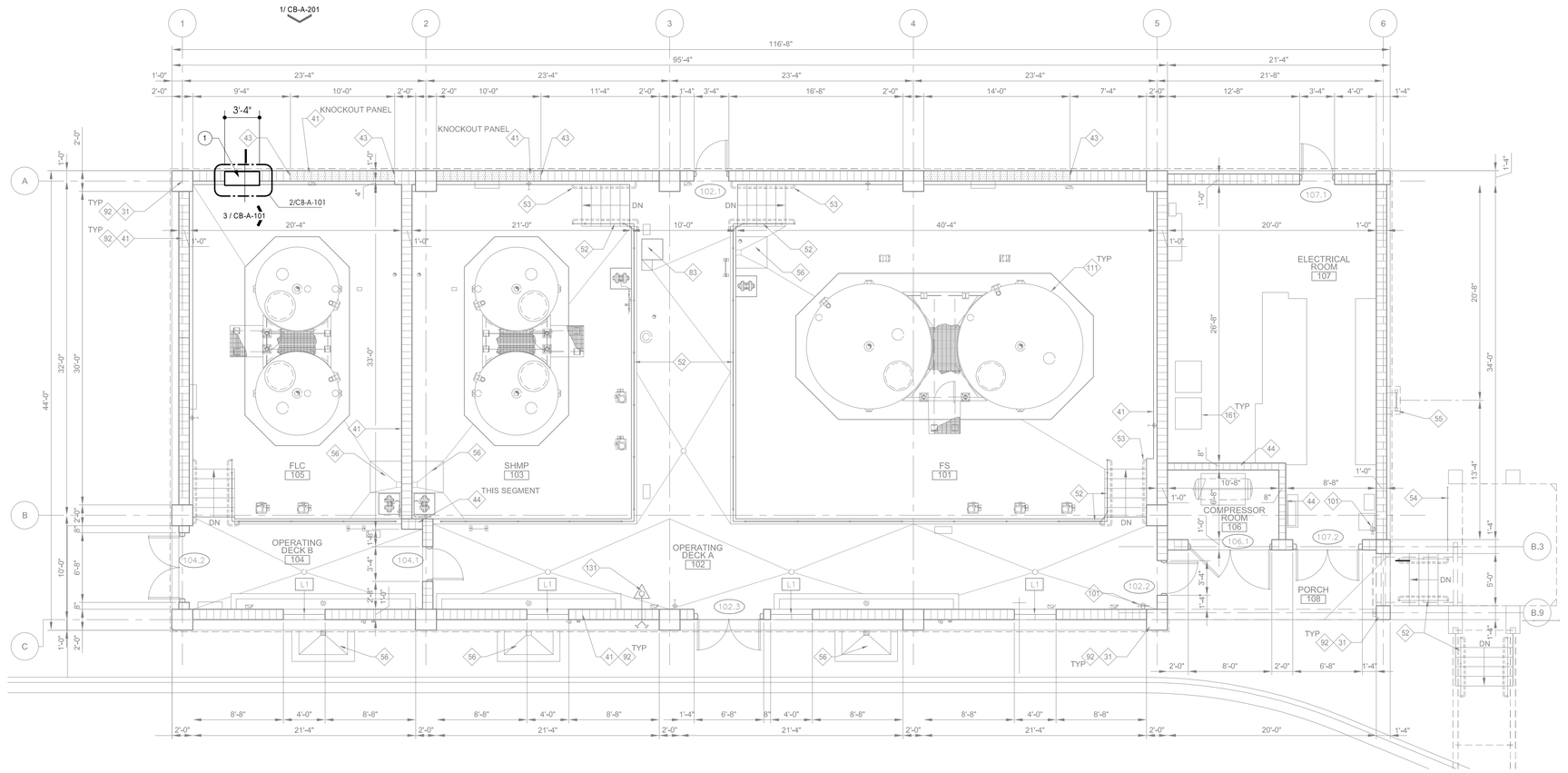
SHEET NUMBER



3 HEAD SILL DETAIL
3" = 1'-0"



2 PLAN DETAIL
3" = 1'-0"



1 CHEMICAL BUILDING - FLOOR PLAN
3/16" = 1'-0"

TRUE NORTH PLANT NORTH

◇ EXISTING KEYNOTES

31. EXISTING CONCRETE STRUCTURE
41. EXISTING CMU 12 IN NOM BED WIDTH
43. EXISTING CMU CONTROL JOINT
44. PARTIAL HEIGHT 8IN CMU WALL W/ GYP ASSEMBLY ABOVE
52. EXISTING FRP GUARDRAIL SYSTEM: TOP-MOUNT TYP
53. EXISTING FRP HANDRAIL SYSTEM: WALL MOUNT TYP
55. EXISITNG METAL LADDER
56. EXISITNG BAR GRATING PER STRUCTURAL
83. EXISTING FLOOR ACCESS DOOR - LIGHT DUTY
92. EXISITNG WATER REPELLANT TYP. ON CMU & SLOPED CONC. SILL
101. EXISTING FIRE EXTINGUISHER-SURFACE MOUNTED
111. EXISTING PROCESS MECHANICAL EQUIPMENT
131. EXISTING FIRE PROTECTION EQUIPMENT
151. EXISITNG ELECTRICAL EQUIPMENT OR ACCESSORY

○ NEW CONSTRUCTION KEYNOTES

1 3'-4" X 3'-4" PRE-FINISH ALUM. LOUVER
3 5' X 5' CONCRETE PAD
5 NEW MECH. UNIT - WALL MOUNTED
7 DUST COLLECTION BAG
8 MECHANICAL EQUIPMENT. RE:MEP
10 3'-4" X 3'-4" PREFIN ALUM. LOUVER
12 EXISTING LOUVER
13 DUST BAG HOUSING WALL-MOUNTED
14 8" CMU ENCLOSURE
15 CONCRETE PAD. RE:STRUCTURAL
17 EXISTING DUSTLINE
18 CMU LINTEL RE:STRUCTURAL
19 CMU SILL TO MATCH EXISTING COLOR,SIZE,& TEXTURE RE:STRUCTURAL - INTEGRAL WATER REPELLANT ON CMU & GROUT
20 REINSTALL WALL PANELS AS REQUIRED FOR NEW WORK
21 CONC. FOUNDATION RE: STRUCTURAL
22 NEW FLUTE
23 5'-4" X 3'-4" PREFIN ALUM. LOUVER
24 CMU INFILL TO MATCH EXISTING
25 PREP AND PAINT TO NEAREST CONTROL JOINT
26 WALKING PAD
27 5'- 0" - 5' 0" PREFIN ALUM. LOUVER
31 REMOVE LOUVER & CMU FOR NEW LOUVER

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	03/19/21

PROFESSIONAL SEALS

REGISTERED ARCHITECT 16237 STATE OF TEXAS

03/19/21

CHEMICAL BUILDING
NEW CONSTRUCTION FLOOR PLAN

DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

CB-A-101

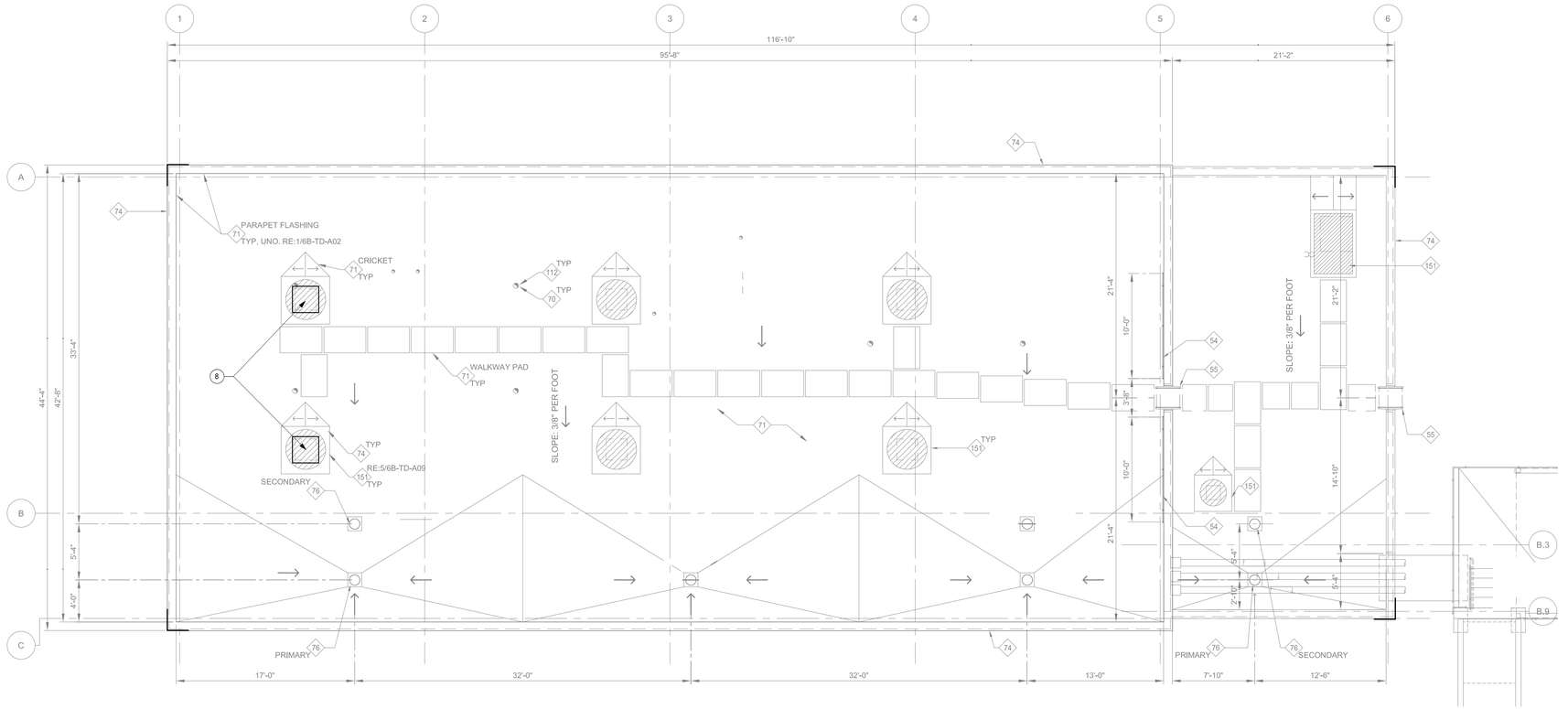
SHEET NUMBER

◇ EXISTING KEYNOTES

53. EXISTING FRP HANDRAIL SYSTEM: WALL MOUNT TYP
54. EXISTING FRP HANDRAIL SYSTEM: SIDE MOUNT TYP
55. EXISITNG METAL LADDER
56. EXISITNG BAR GRATING
70. EXISTING ROOF PENETRATION
71. EXISTING ROOF SYSTEM OR ACCESSORY
72. EXISTING EXTERIOR WALL PANEL OR ACCESSORY
74. EXISTING BENT METAL TRIM
112. EXISTING PROCESS MECHANICAL ROOF PENETRATION
151. EXISTING HVAC EQUIPMENT OR ACCESSORY
164. REMOVE EXISTING MECH. EQUIPMENT / EXISITNG OPENING AND CURB TO REMAIN. RE: MEP

○ NEW CONSTRUCTION KEYNOTES

1 3'-4" X 3'-4" PRE-FINISH ALUM. LOUVER
3 5' X 5' CONCRETE PAD
5 NEW MECH. UNIT - WALL MOUNTED
7 DUST COLLECTION BAG
8 MECHANICAL EQUIPMENT. RE:MEP
10 3'-4" X 3'-4" PREFIN ALUM. LOUVER
12 EXISTING LOUVER
13 DUST BAG HOUSING WALL-MOUNTED
14 8" CMU ENCLOSURE
15 CONCRETE PAD. RE:STRUCTURAL
17 EXISTING DUSTLINE
18 CMU LINTEL RE:STRUCTURAL
19 CMU SILL TO MATCH EXISTING COLOR SIZE & TEXTURE RE:STRUCTURAL - INTEGRAL WATER REPELLANT ON CMU & GROUT
20 REINSTALL WALL PANELS AS REQUIRED FOR NEW WORK
21 CONC. FOUNDATION RE: STRUCTURAL
22 NEW FLUTE
23 5'-4" X 3'-4" PREFIN ALUM. LOUVER
24 CMU INFILL TO MATCH EXISTING
25 PREP AND PAINT TO NEAREST CONTROL JOINT
26 WALKING PAD
27 5'- 0" - 5' 0" PREFIN ALUM. LOUVER
31 REMOVE LOUVER & CMU FOR NEW LOUVER



TRUE NORTH PLANT NORTH

1 CHEMICAL BUILDING - ROOF PLAN
3/16" = 1'-0"

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
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PROFESSIONAL SEALS

REGISTERED ARCHITECT 16237 STATE OF TEXAS

03/19/21

CHEMICAL BUILDING
NEW CONSTRUCTION ROOF PLAN

DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

CB-A-102

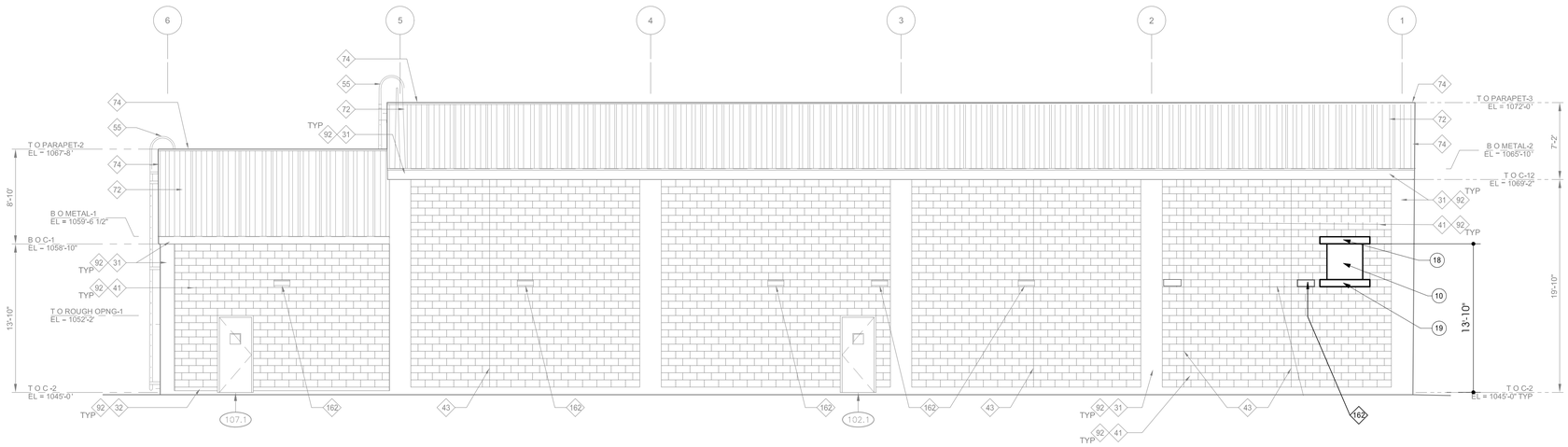
SHEET NUMBER

◇ EXISTING KEYNOTES

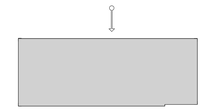
31. EXISITNG CONCRETE STRUCTURE
32. EXISITNG CONCRETE CURB OR PAD
41. EXISTING CMU-12IN NOM BED
43. EXISITNG CMU CONTROL JOINT
55. EXISITNG METAL LADDER
72. EXISTING EXTERIOR WALL PANEL OR ACCESSORY
74. EXISTING BENT METAL TRIM
92. EXISITNG WATER REPELLANT TYP ON CMU & SLOPED CONC SILL
162. EXISTING EXTERIOR LIGHT FIXTURE
165. REMOVE EXISTING CMU FOR NEW LOUVER OPENING

○ NEW CONSTRUCTION KEYNOTES

1 3'-4" X 3'-4" PRE-FINISH ALUM. LOUVER
3 5' X 5' CONCRETE PAD
5 NEW MECH. UNIT - WALL MOUNTED
7 DUST COLLECTION BAG
8 MECHANICAL EQUIPMENT. RE:MEP
10 3'-4" X 3'-4" PREFIN ALUM. LOUVER
12 EXISTING LOUVER
13 DUST BAG HOUSING WALL-MOUNTED
14 8" CMU ENCLOSURE
15 CONCRETE PAD. RE:STRUCTURAL
17 EXISTING DUSTLINE
18 CMU LINTEL RE:STRUCTURAL
19 CMU SILL TO MATCH EXISTING COLOR SIZE & TEXTURE RE:STRUCTURAL - INTEGRAL WATER REPELLANT ON CMU & GROUT
20 REINSTALL WALL PANELS AS REQUIRED FOR NEW WORK
21 CONC. FOUNDATION RE: STRUCTURAL
22 NEW FLUTE
23 5'-4" X 3'-4" PREFIN ALUM. LOUVER
24 CMU INFILL TO MATCH EXISTING
25 PREP AND PAINT TO NEAREST CONTROL JOINT
26 WALKING PAD
27 5'- 0" - 5' 0" PREFIN ALUM. LOUVER
31 REMOVE LOUVER & CMU FOR NEW LOUVER



1 CHEMICAL BUILDING - NORTH ELEVATION
3/16" = 1'-0"



KEY PLAN

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	03/19/21

PROFESSIONAL SEALS

REGISTERED ARCHITECT STATE OF TEXAS 16237

03/19/21

CHEMICAL BUILDING
NEW CONSTRUCTION ELEVATION

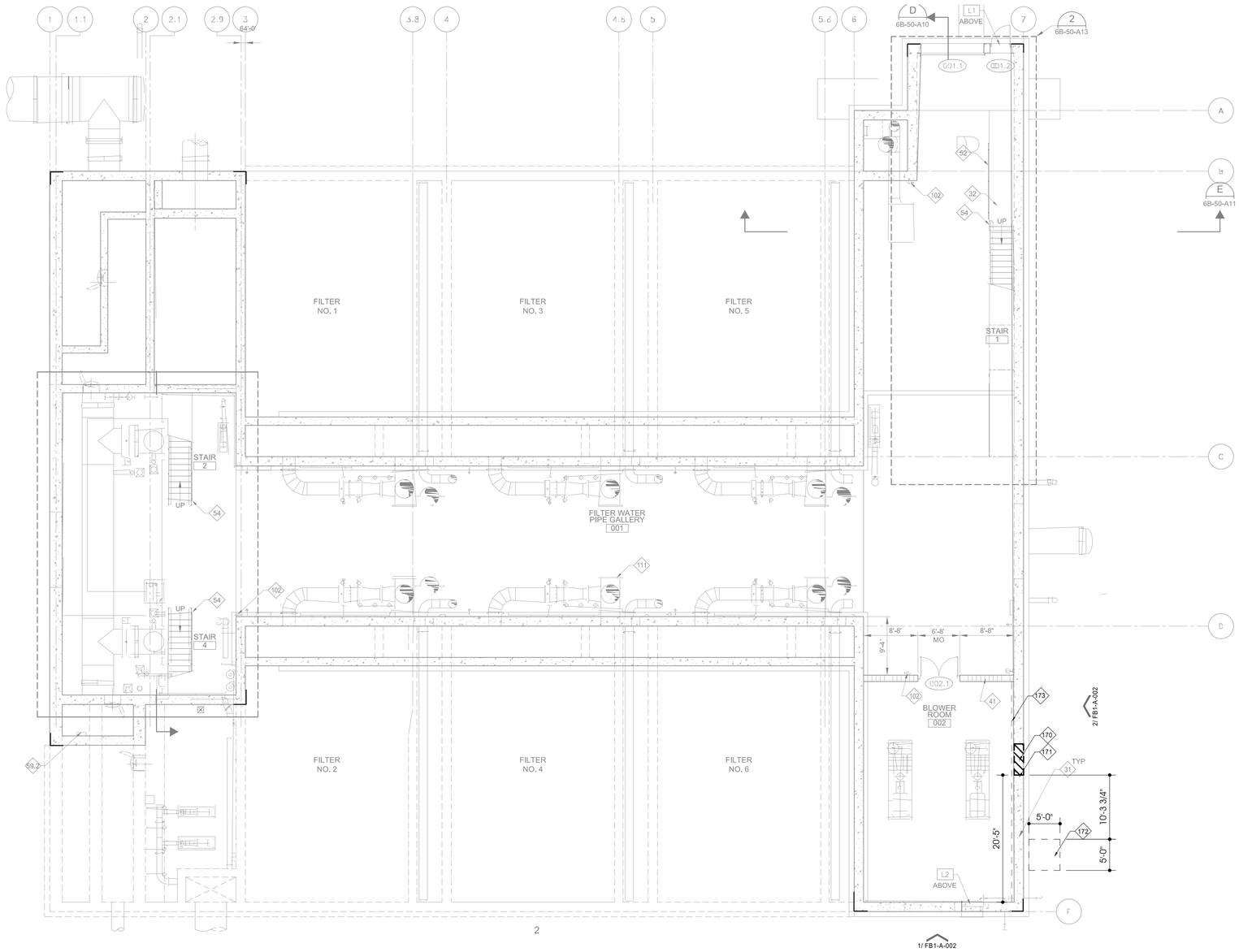
DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

CB-A-201

SHEET NUMBER

◇ DEMO KEYNOTES

31. EXISTING CONCRETE STRUCTURE
32. EXISITNG CONCRETE CURB OR PAD
41. EXISTING CMU 12 IN NOM BED WIDTH
52. EXISTING AL GUARDRAIL SYSTEM: SIDE-MOUNT TYP
54. EXISITNG GALV STEEL STAIR
59.2 EXISTING SST LADDER SIDE STEP (SUBMERGED)
102. EXISTING FIRE EXTINGUISHER-SURFACE MOUNTED
111. EXISTING PROCESS MECHANICAL EQUIPMENT
170. REMOVE/SALVAGE EXISTING METAL LOUVER PANELS FOR REINSTALLATION OR DELIVER TO OWNER
171. REMOVE PORTION OF EXISTING CEMENT WALL FOR NEW 60"x60" LOUVER OPENING
172. PREP AREA FOR CONCRETE PAD
173. EXISTING ACCOUSTICAL PANELS TO REMAIN



TRUE NORTH PLANT NORTH

1 FILTER BUILDING- DEMO FLOOR PLAN
1/8" = 1'-0"

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REGISTERED ARCHITECT STATE OF TEXAS 16237

03/19/21

FILTER BUILDING
DEMO FLOOR PLAN

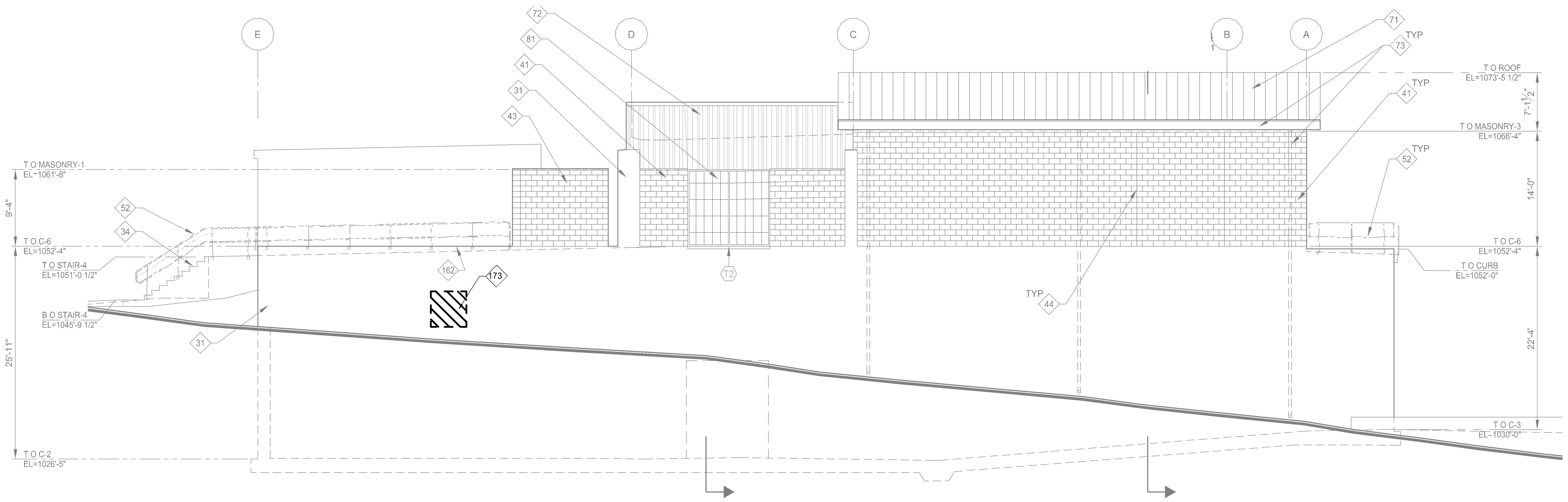
DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

FB1-A-001

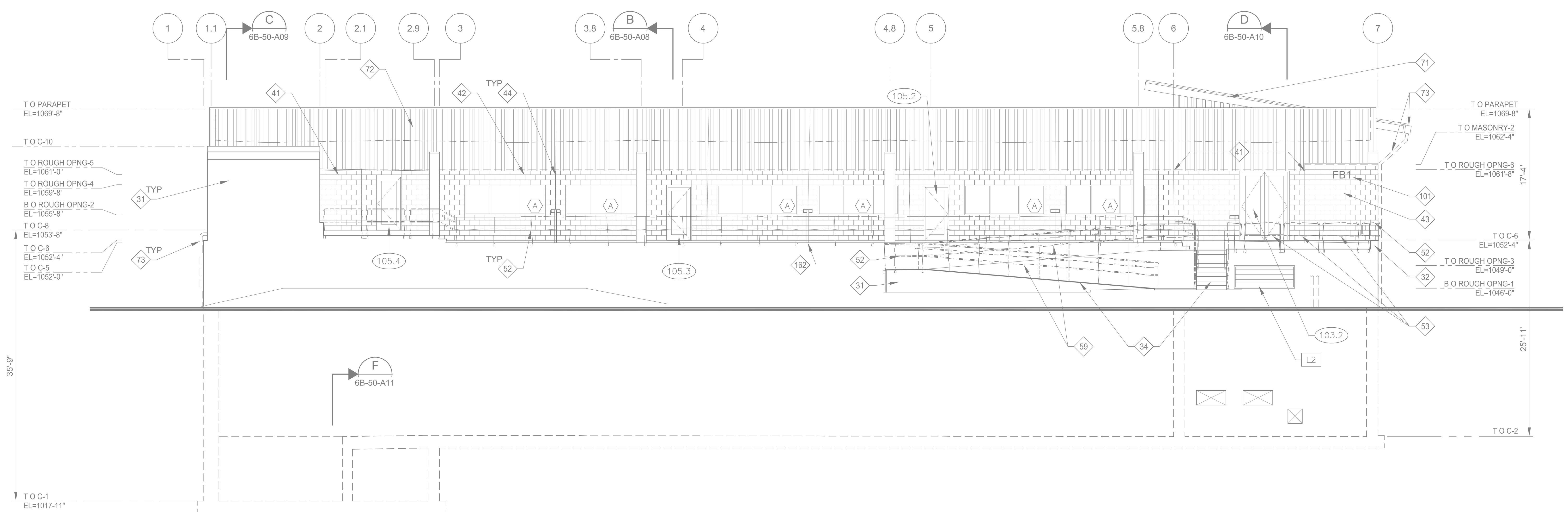
SHEET NUMBER

◇ DEMO KEYNOTES

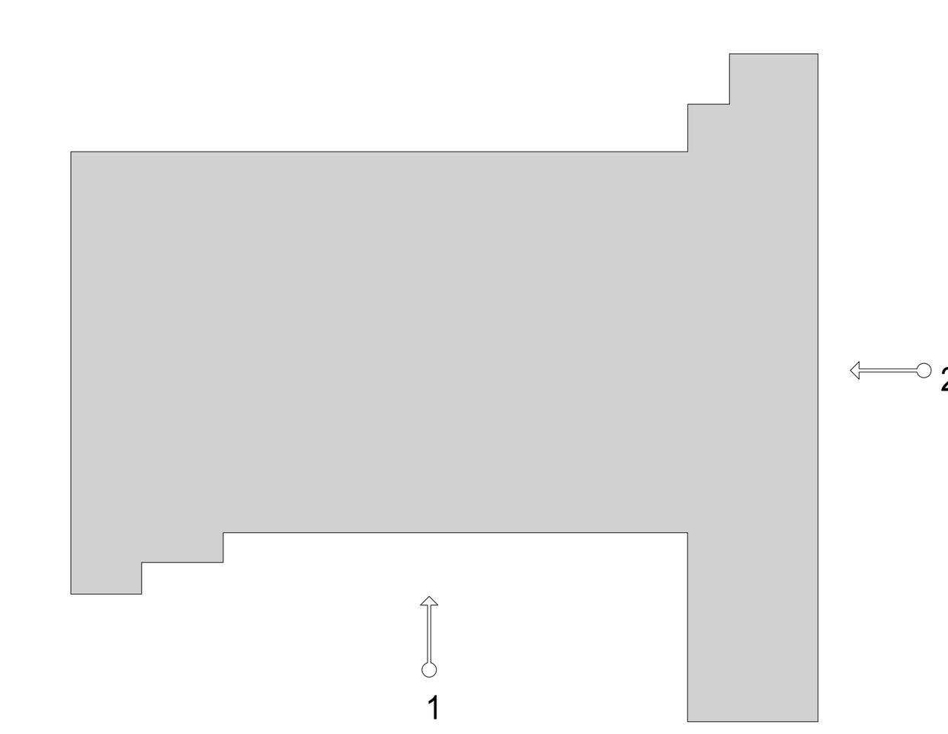
31. EXISTING CONCRETE STRUCTURE
32. EXISTING CONCRETE CURB OR PAD
34. EXISTING CONCRETE STEPS OR RAMP
41. EXISTING CMU 12 IN NOM BED WIDTH
42. EXISTING CMU 8 IN NOM BED WIDTH
43. EXISTING CMU 8 IN NOM BED WIDTH W/ 2IN SOLID CAP
44. EXISITNG MASONRY CONTROL JOINT
52. EXISTING AL GUARDRAIL SYSTEM: SIDE-MOUNT TYP
53. EXISTING AL GUARDRAIL SYSTEM: REMOVABLE
59. EXISTING AL GUARDRAIL SYSTEM: TOP-MOUNT
71. EXISTING ROOF ASSEMBLY OR ACCESSORY
73. EXISTING GUTTER AND DOWNSPOUT SYSTEM
81. EXISTING TRANSLUCENT WALL PANEL
101. EXISITNG BUILDING SIGNAGE
162. EXISTING LIGHT FIXTURE
173. REMOVE PORTION OF EXISTING CONCRETE WALL FOR NEW LOUVER OPENING
174. EXISTING LOUVER



2 FILTER BUILDING - DEMO EAST ELEVATION
1/8" = 1'-0"



1 FILTER BUILDING - DEMO SOUTH ELEVATION
1/8" = 1'-0"



KEY PLAN

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6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

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0	ISSUED FOR CONSTRUCTION	03/19/21

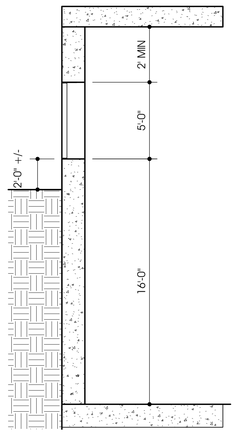
PROFESSIONAL SEALS

03/19/21

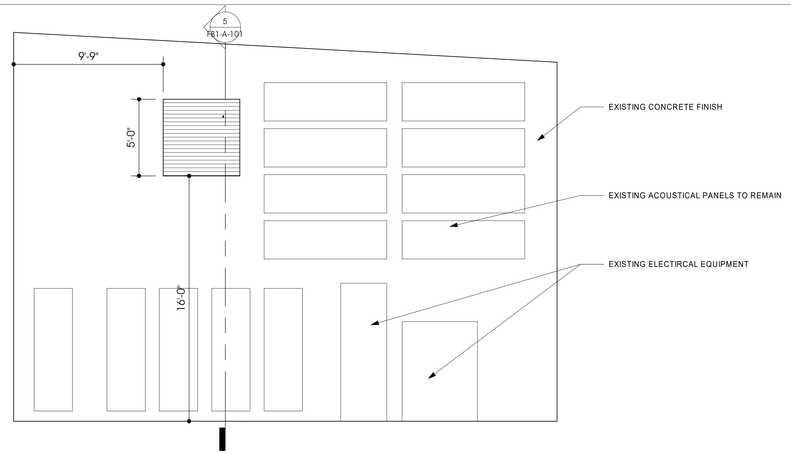
FILTER BULDING
DEMO ELEVATION

DRAWN BY GG | CHECKED BY FG
PROJECT NUMBER 20005 | PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC | DATE 03/19/21

FB1-A-002
SHEET NUMBER



5 FILTER BUILDING SECTION
1/4" = 1'-0"



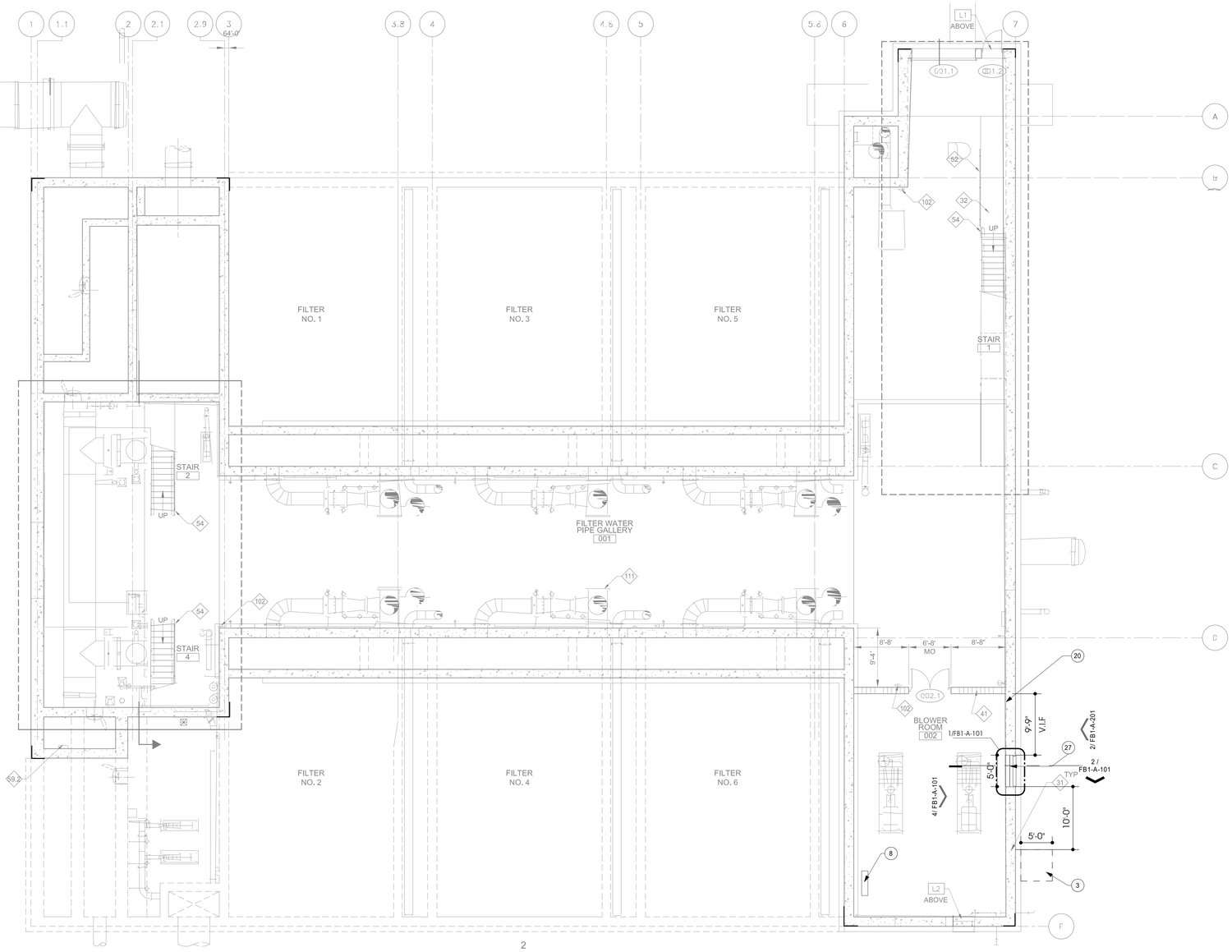
FILTER BUILDING INTERIOR EAST ELEVATION
4 1/4" = 1'-0"

◇ EXISTING KEYNOTES

31. EXISTING CONCRETE STRUCTURE
32. EXISITNG CONCRETE CURB OR PAD
41. EXISTING CMU 12 IN NOM BED WIDTH
52. EXISTING AL GUARDRAIL SYSTEM: SIDE-MOUNT TYP
54. EXISITNG GALV STEEL STAIR
59.2 EXISTING SST LADDER SIDE STEP (SUBMERGED)
102. EXISITNG FIRE EXTINGUISHER-SURFACE MOUNTED
111. EXISITNG PROCESS MECHANICAL EQUIPMENT

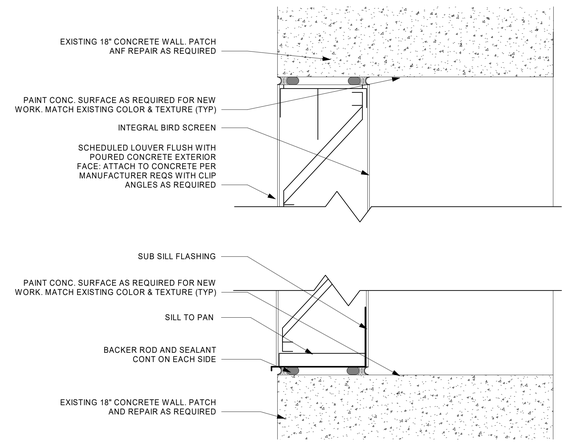
○ NEW CONSTRUCTION KEYNOTES

1 3'-4" X 3'-4" PRE-FINISH ALUM. LOUVER
3 5' X 5' CONCRETE PAD
5 NEW MECH. UNIT - WALL MOUNTED
7 DUST COLLECTION BAG
8 MECHANICAL EQUIPMENT, RE:MEP
10 3'-4" X 3'-4" PREFIN ALUM. LOUVER
12 EXISTING LOUVER
13 DUST BAG HOUSING WALL-MOUNTED
14 8" CMU ENCLOSURE
15 CONCRETE PAD, RE:STRUCTURAL
17 EXISTING DUSTLINE
18 CMU LINTEL RE:STRUCTURAL
19 CMU SILL TO MATCH EXISTING COLOR SIZE & TEXTURE RE:STRUCTURAL - INTEGRAL WATER REPELLANT ON CMU & GROUT
20 REINSTALL WALL PANELS AS REQUIRED FOR NEW WORK
21 CONC. FOUNDATION RE: STRUCTURAL
22 NEW FLUTE
23 5'-4" X 3'-4" PREFIN ALUM. LOUVER
24 CMU INFILL TO MATCH EXISTING
25 PREP AND PAINT TO NEAREST CONTROL JOINT
26 WALKING PAD
27 5'-0" - 5'-0" PREFIN ALUM. LOUVER
31 REMOVE LOUVER & CMU FOR NEW LOUVER

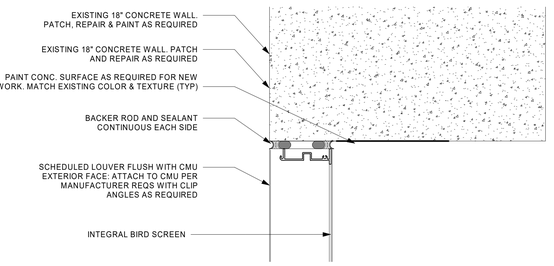


3 FILTER BUILDING - FLOOR PLAN
1/8" = 1'-0"

TRUE NORTH PLANT NORTH



2 CONCRETE HEAD SILL DETAIL
3" = 1'-0"



1 CONCRETE PLAN DETAIL
3" = 1'-0"

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
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PROFESSIONAL SEALS

REGISTERED ARCHITECT 16233 STATE OF TEXAS

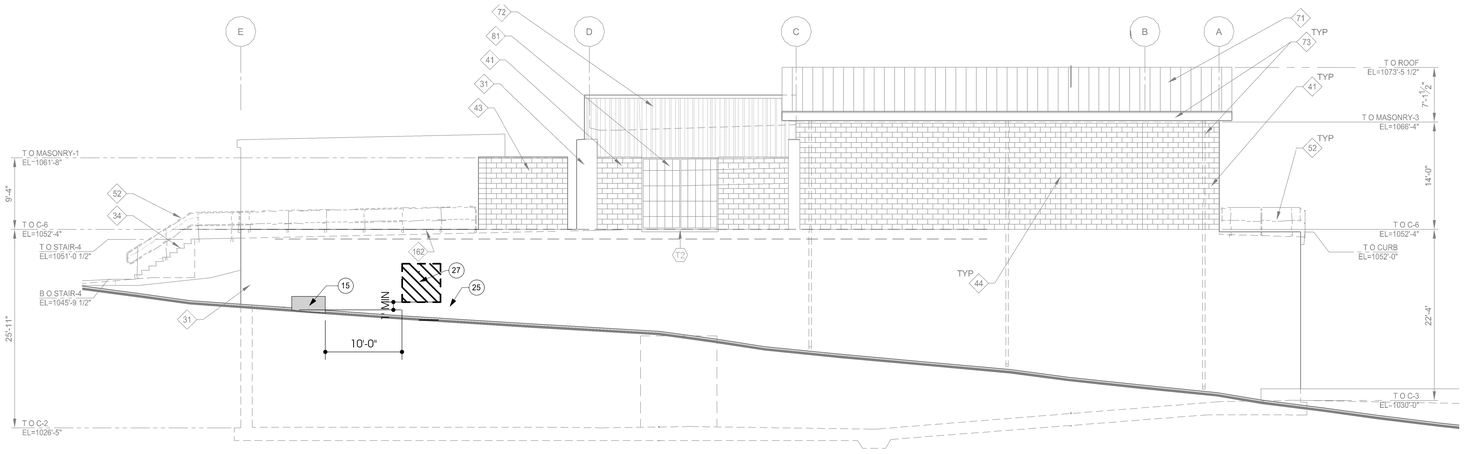
03/19/21

FILTER BUILDING
NEW CONSTRUCTION FLOOR PLAN

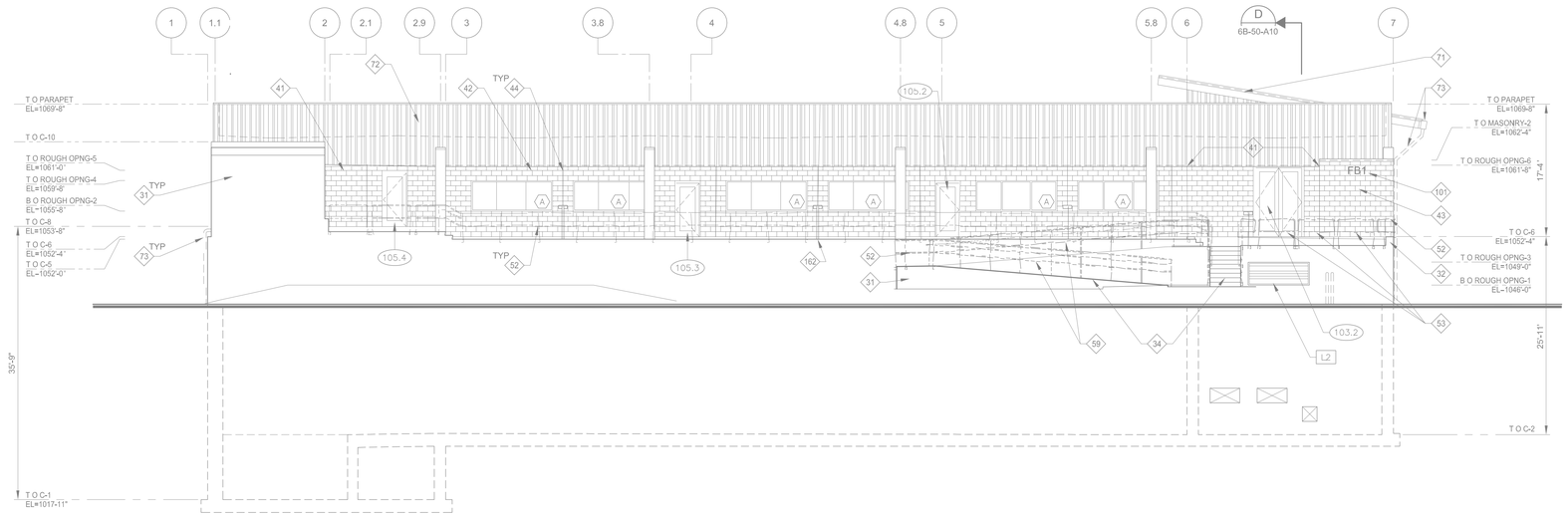
DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

FB1-A-101

SHEET NUMBER



2 FILTER BUILDING - EAST ELEVATION
1/8" = 1'-0"



1 FILTER BUILDING - SOUTH ELEVATION
1/8" = 1'-0"

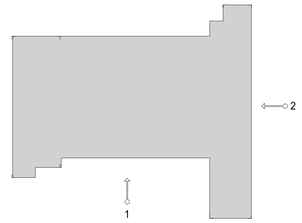
◇ EXISTING KEYNOTES

31. EXISTING CONCRETE STRUCTURE
32. EXISTING CONCRETE CURB OR PAD
34. EXISTING CONCRETE STEPS OR RAMP
41. EXISTING CMU 12 IN NOM BED WIDTH
42. EXISTING CMU 8 IN NOM BED WIDTH
43. EXISTING CMU 8 IN NOM BED WIDTH W/ 2IN SOLID CAP
44. EXISTING MASONRY CONTROL JOINT
52. EXISTING AL GUARDRAIL SYSTEM: SIDE-MOUNT TYP
53. EXISTING AL GUARDRAIL SYSTEM: REMOVABLE
59. EXISTING AL GUARDRAIL SYSTEM: TOP-MOUNT
71. EXISTING ROOF ASSEMBLY OR ACCESSORY
73. EXISTING GUTTER AND DOWNSPOUT SYSTEM
81. EXISTING TRANSLUCENT WALL PANEL
101. EXISITNG BUILDING SIGNAGE
162. EXISTING LIGHT FIXTURE

○ NEW CONSTRUCTION KEYNOTES

1 3'-4" X 3'-4" PRE-FINISH ALUM. LOUVER
3 5' X 5' CONCRETE PAD
5 NEW MECH. UNIT - WALL MOUNTED
7 DUST COLLECTION BAG
8 MECHANICAL EQUIPMENT. RE:MEP
10 3'-4" X 3'-4" PREFIN ALUM. LOUVER
12 EXISTING LOUVER
13 DUST BAG HOUSING WALL-MOUNTED
14 8" CMU ENCLOSURE
15 CONCRETE PAD. RE:STRUCTURAL
17 EXISTING DUSTLINE
18 CMU LINTEL RE:STRUCTURAL
19 CMU SILL TO MATCH EXISTING COLOR SIZE & TEXTURE RE:STRUCTURAL - INTEGRAL WATER REPELLANT ON CMU & GROUT
20 REINSTALL WALL PANELS AS REQUIRED FOR NEW WORK
21 CONC. FOUNDATION RE: STRUCTURAL
22 NEW FLUTE
23 5'-4" X 3'-4" PREFIN ALUM. LOUVER
24 CMU INFILL TO MATCH EXISTING
25 PREP AND PAINT TO NEAREST CONTROL JOINT
26 WALKING PAD
27 5'-0" - 5' 0" PREFIN ALUM. LOUVER
31 REMOVE LOUVER & CMU FOR NEW LOUVER

KEY PLAN



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REVISION HISTORY

REVISION	DESCRIPTION	DATE
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PROFESSIONAL SEALS

03/19/21

FILTER BUILDING
NEW CONSTRUCTION ELEVATION

DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

FB1-A-201

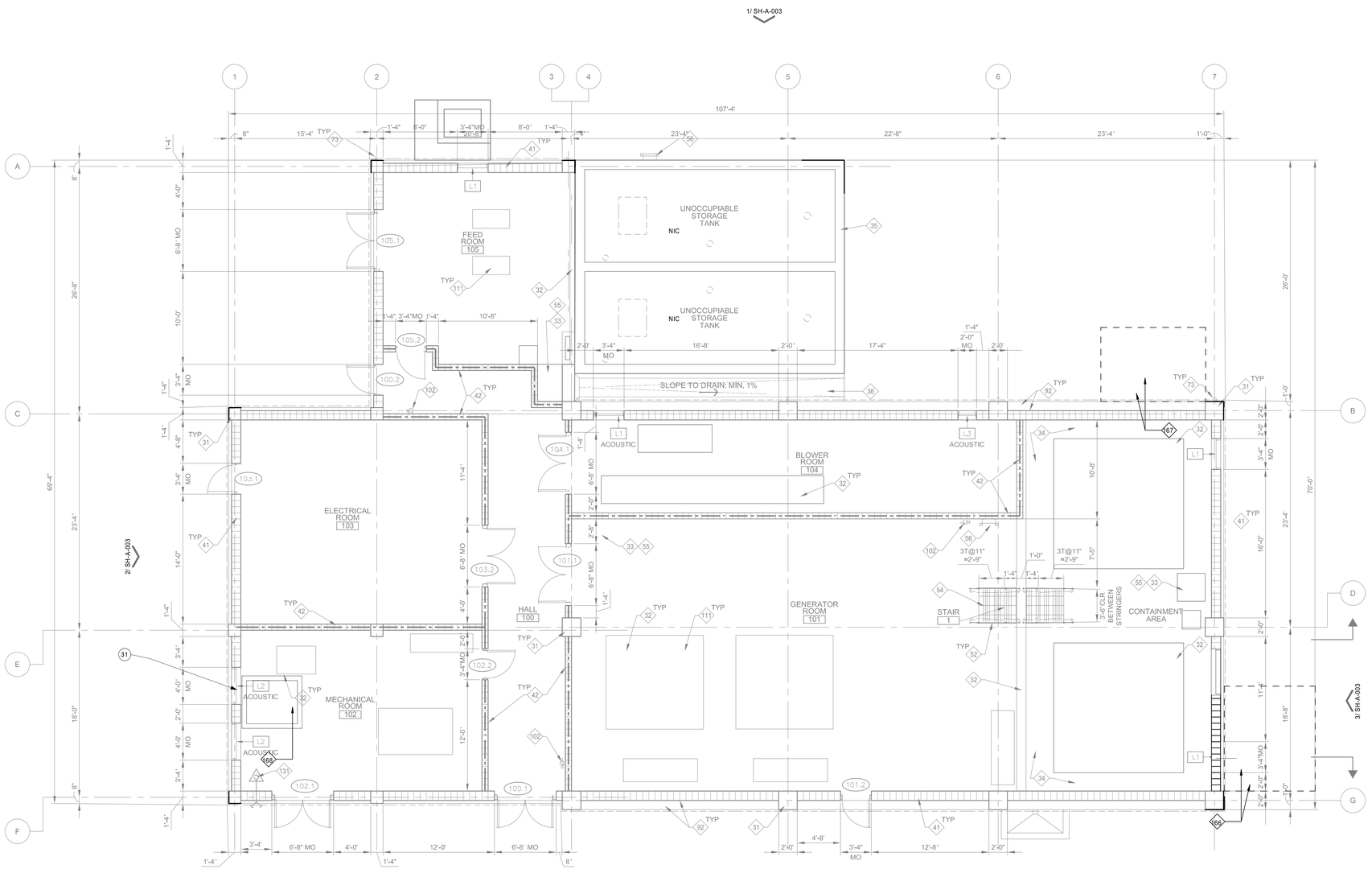
SHEET NUMBER

◇ DEMO KEYNOTES

31. EXISTING CONCRETE STRUCTURE
32. EXISTING CONCRETE CURB OR PAD OR WALL
33. EXISTING CONCRETE FLOOR SUMP
35. EXISTING CONCRETE TANK WITH LINING
36. EXISTING CONCRETE FLATWORK WITH SLOPE TO DRAIN
41. EXISTING CMU 12 IN VOM BED WIDTH
42. EXISTING CMU 8 IN VOM BED WIDTH
52. EXISTING AL GUARDRAIL SYSTEM: TOP MOUNT
54. EXISTING FRP STAIR ASSEMBLY AND RAILING
55. EXISITNG BAR GRATING PER STRUCTURAL
56. EXISITNG ALUMINUM LADDER
73. EXISTING GUTTER AND DOWNSPOUT SYSTEM
92. EXISTING WATER REPELLANT TYP ON CMU AND SLOPED CONC SILL AS INDICATED
102. EXISTING FIRE EXTINGUSHER-SURFACE MOUNTED
111. EXISTING PROCESS MECH EQUIP OR ACCESSORY
131. EXISTING FIRE PROTECTION EQUIPMENT
163. REMOVE EXISTING CMU FOR NEW LOUVER OPENING
166. REMOVE HARDSCAPE AND PREP FOR NEW CONC. PAD
167. PREP FOR NEW CONCRETE PAD
168. RE.OVE EQUIPMENT & SLAVAGE FOR REINSTALLATION. RE: MEP

GENERAL NOTES

1. ALL INTERIOR WALLS IN THIS BUILDING SHALL HAVE A ONE HOUR MINIMUM FIRE RATING



1 SODIUM HYPOCHLORITE BUILDING - DEMO FLOOR PLAN
3/16" = 1'-0"

TRUE NORTH PLANT NORTH

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REVISION HISTORY

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PROFESSIONAL SEALS

REGISTERED ARCHITECT 16237 STATE OF TEXAS

03/19/21

SODIUM HYPOCHLORITE BUILDING FLOOR PLAN

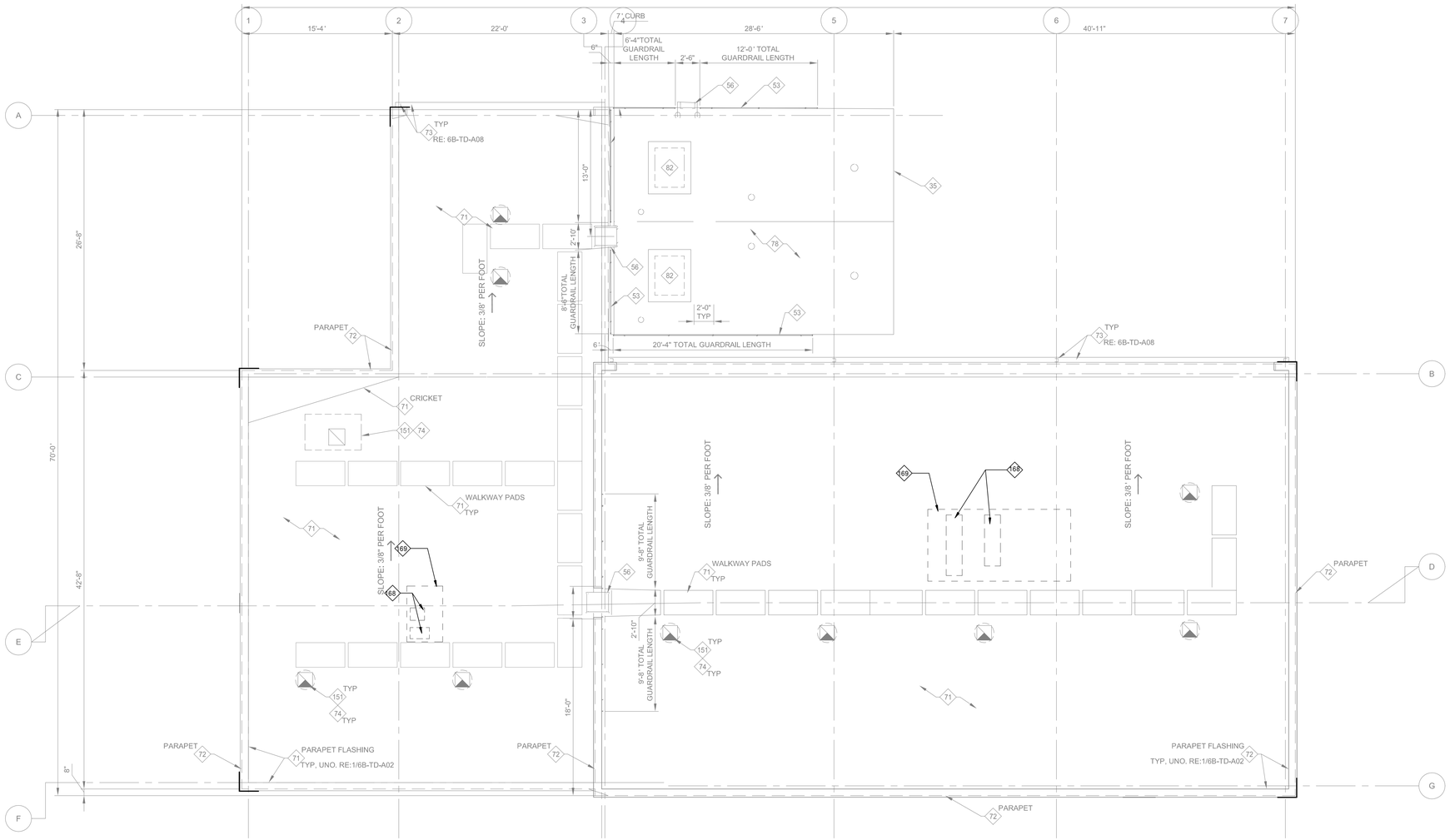
DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

SH-A-001

SHEET NUMBER

◇ DEMO KEYNOTES

35. EXISTING CONCRETE TANK WITH LINING
53. EXISTING AL GUARDRAIL SYSTEM: SIDE MOUNT
56. EXISITNG ALUMINUM LADDER
71. EXISTING ROOF ASSEMBLY OR ACCESSORY
72. EXISTING EXTERIOR WALL PANEL OR ACCESSORY
73. EXISTING GUTTER AND DOWNSPOUT SYSTEM
74. EXISTING ROOF PENETRATION
78. EXISTING WATER REPELLANT TYP @ EXT. HORIZONTAL CONC. SURFACES
82. REMOVEABLE FRP ACCESS COVER
151. HVAC EQUIPMENT OR ACCESSORY
168. REMOVE ROOF SYSTEM & DECK FOR NEW OPENING. REFER TO MEP & STRUCTURAL DWGS
169. LIMITS OF NEW EQUIPMENT



1 SODIUM HYPOCHLORITE BUILDING - DEMO ROOF PLAN
3/16" = 1'-0"

TRUE NORTH PLANT NORTH

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03/19/21

SODIUM HYPOCHLORITE
DEMO ROOF PLAN

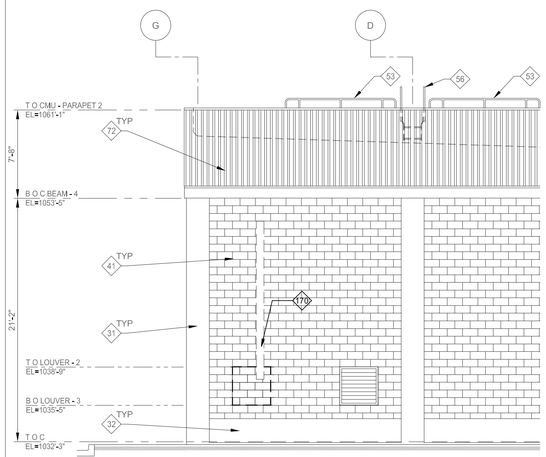
DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

SH-A-002

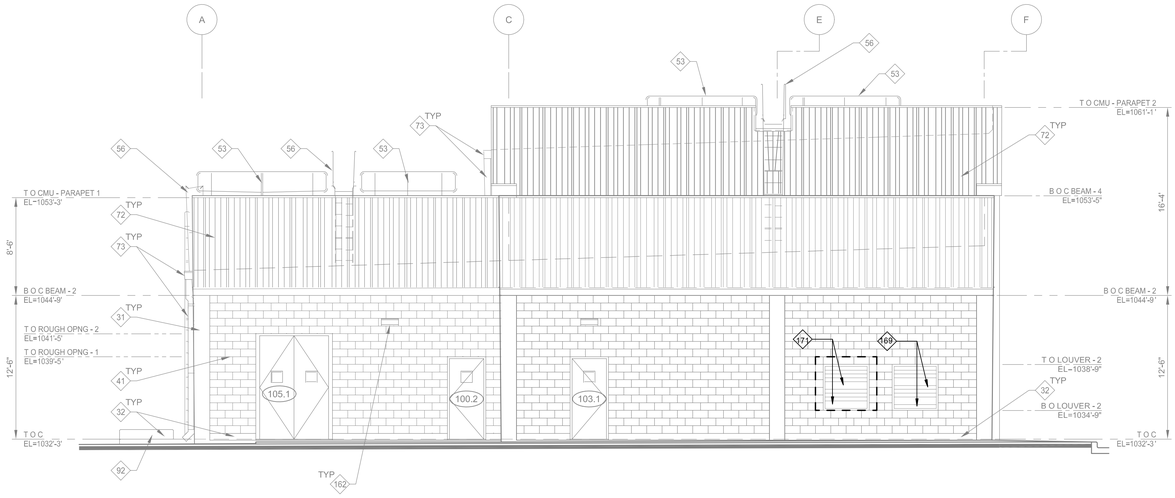
SHEET NUMBER

◇ DEMO KEYNOTES

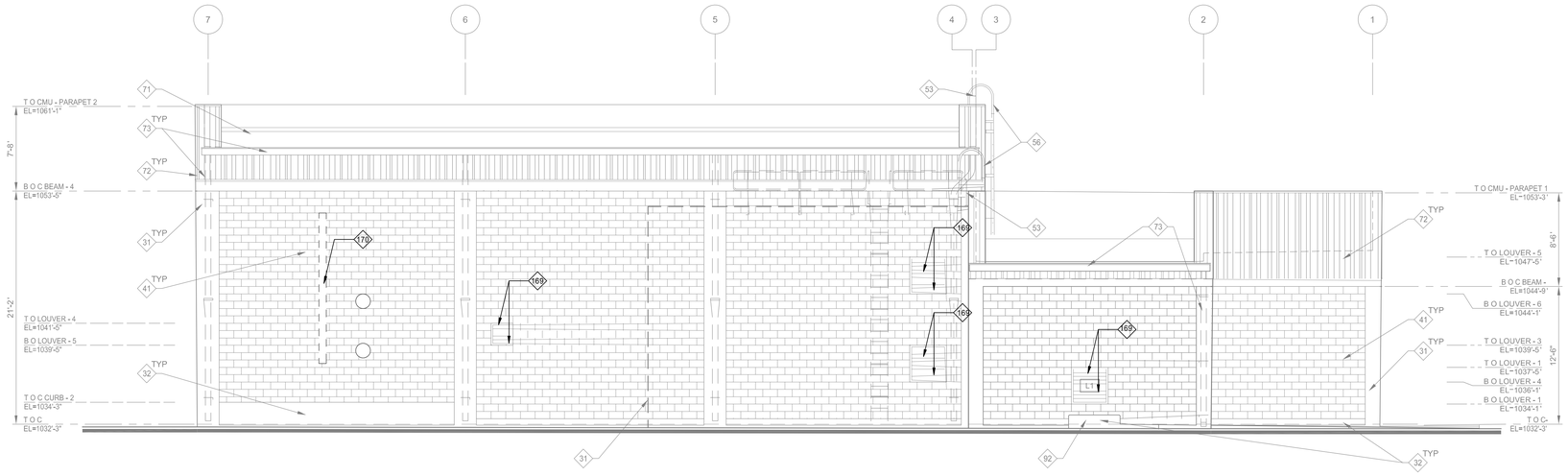
31. EXISTING CONCRETE STRUCTURE
32. EXISTING CONCRETE CURB OR PAD OR WALL
41. EXISTING CMU 12 IN VOM BED WIDTH
53. EXISITNG AL GUARDRAIL SYSTEMP SIDE MOUNT
56. EXISITNG ALUMINUM LADDER
92. WATER REPELLANT TYP ON CMU AND SLOPED CONC SILL AS INDICATED
169. EXISTING LOUVERS TO REMAIN
170. EXISTING FLUTE TO REMIAN, MODIFY AS REQUIRED
171. DEMO EXISTING LOUVER AND CMU



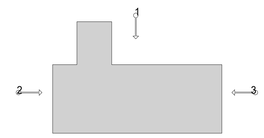
3 SODIUM HYPOCHLORITE - DEMO PARTIAL NORTH ELEVATION
3/16" = 1'-0"



2 SODIUM HYPOCHLORITE - DEMO SOUTH ELEVATION
3/16" = 1'-0"



1 SODIUM HYPOCHLORITE - DEMO WEST ELEVATION
3/16" = 1'-0"



KEY PLAN

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	03/19/21

PROFESSIONAL SEALS

REGISTERED ARCHITECT 18237 STATE OF TEXAS

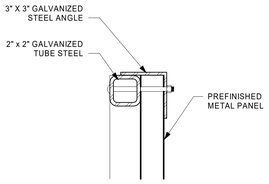
03/19/21

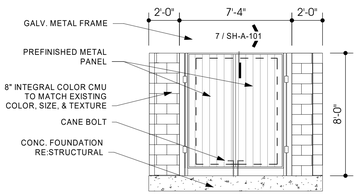
SODIUM HYPOCHLORITE BUILDING EXTERIOR ELEVATION

DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

SH-A-003

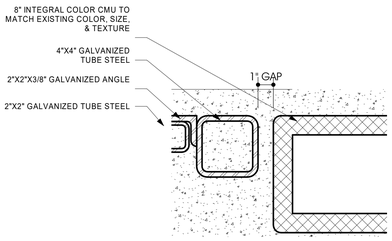
SHEET NUMBER

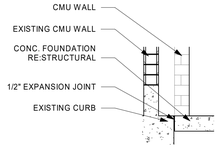




7 SODIUM HYPOCHLORITE - ENCLOSURE SECTION
3" = 1'-0"

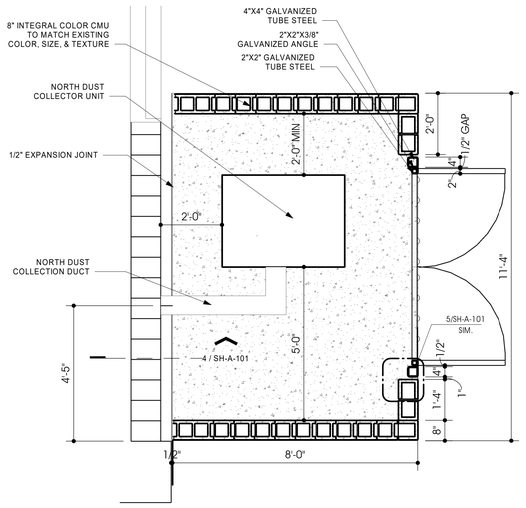
6 SODIUM HYPOCHLORITE - ENCLOSURE ELEVATION (TYP)
1/4" = 1'-0"

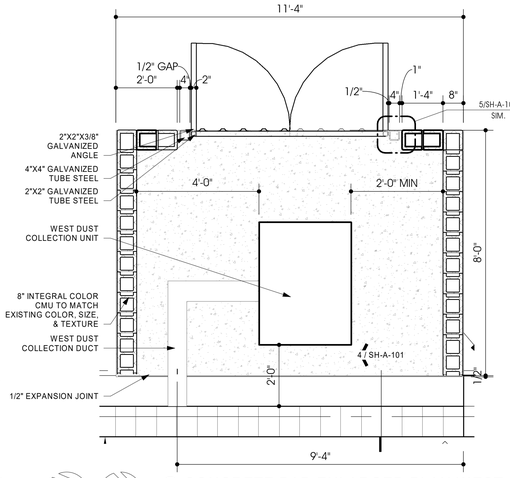




5 CONCRETE PAD CORNER DETAIL
3" = 1'-0"

4 MECHANICAL ENCLOSURE SECTION
1/4" = 1'-0"



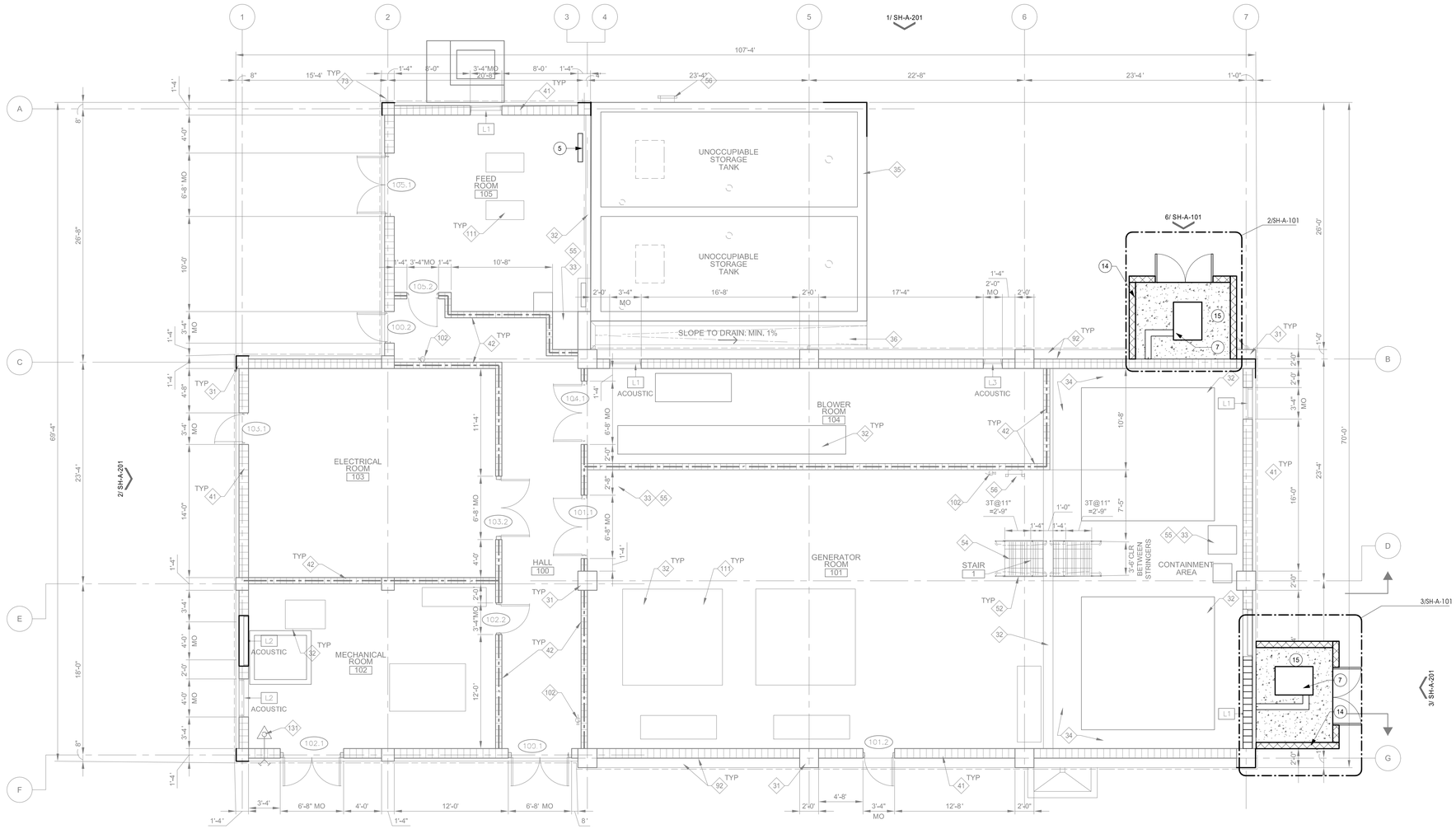


TRUE NORTH PLANT NORTH

3 CONCRETE PAD ENLARGED PLAN NORTH
1/2" = 1'-0"

TRUE NORTH PLANT NORTH

2 CONCRETE PAD ENLARGED PLAN WEST
1/2" = 1'-0"



INDICATES RATED WALL

TRUE NORTH PLANT NORTH

1 SODIUM HYPOCHLORITE BUILDING - FLOOR PLAN
3/16" = 1'-0"

GENERAL NOTES

1. ALL INTERIOR WALLS IN THIS BUILDING SHALL HAVE A ONE HOUR MINIMUM FIRE RATING

◇ EXISTING KEYNOTES

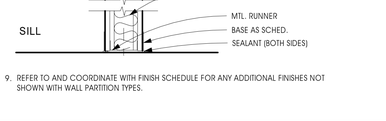
31. EXISTING CONCRETE STRUCTURE
32. EXISTING CONCRETE CURB OR PAD OR WALL
33. EXISTING CONCRETE FLOOR SUMP
35. EXISTING CONCRETE TANK WITH LINING
36. EXISTING CONCRETE FLATWORK WITH SLOPE TO DRAIN
41. EXISTING CMU 12 IN VOM BED WIDTH
42. EXISTING CMU 8 IN VOM BED WIDTH
52. EXISTING AL GUARDRAIL SYSTEM: TOP MOUNT
54. EXISTING FRP STAIR ASSEMBLY AND RAILING
55. EXISITNG BAR GRATING PER STRUCTURAL
56. EXISITNG ALUMINUM LADDER
73. EXISTING GUTTER AND DOWNSPOUT SYSTEM
92. EXISTING WATER REPELLANT TYP ON CMU AND SLOPED CONC SILL AS INDICATED
102. EXISTING FIRE EXTINGUSHER-SURFACE MOUNTED
111. EXISTING PROCESS MECH EQUIP OR ACCESSORY
131. EXISTING FIRE PROTECTION EQUIPMENT

NEW CONSTRUCTION KEYNOTES

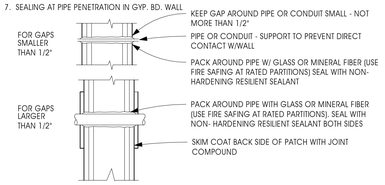
1 3'-4" X 3'-4" PRE-FINISH ALUM. LOUVER
3 5' X 5' CONCRETE PAD
5 NEW MECH. UNIT - WALL MOUNTED
7 DUST COLLECTION BAG
8 MECHANICAL EQUIPMENT. RE:MEP
10 3'-4" X 3'-4" PREFIN ALUM. LOUVER
12 EXISTING LOUVER
13 DUST BAG HOUSING WALL-MOUNTED
14 8" CMU ENCLOSURE
15 CONCRETE PAD. RE:STRUCTURAL
17 EXISTING DUSTLINE
18 CMU LINTEL RE:STRUCTURAL
19 CMU SILL TO MATCH EXISTING COLOR SIZE & TEXTURE RE:STRUCTURAL - INTEGRAL WATER REPELLANT ON CMU & GROUT
20 REINSTALL WALL PANELS AS REQUIRED FOR NEW WORK
21 CONC. FOUNDATION RE: STRUCTURAL
22 NEW FLUTE
23 5'-4" X 3'-4" PREFIN ALUM. LOUVER
24 CMU INFILL TO MATCH EXISTING
25 PREP AND PAINT TO NEAREST CONTROL JOINT
26 WALKING PAD
27 5'- 0" - 5' 0" PREFIN ALUM. LOUVER
31 REMOVE LOUVER & CMU FOR NEW LOUVER

GENERAL PARTITION NOTES:

1. REFER TO PLANS FOR LOCATION OF PARTITION TYPES; REFER TO WALL PRIORITY LEGEND BELOW FOR CONDITIONS WHERE RATED PARTITIONS INTERSECT NON-RATED PARTITIONS. PARTITION TYPE "A2" IS THE DEFAULT - USE UNLESS NOTED OTHERWISE.
2. "UNDERSIDE OF DECK" INDICATED AT HEAD CONDITIONS FOR EACH PARTITION TYPE IS DIAGRAMMATIC ONLY AND DOES NOT INDICATE EXACT CONSTRUCTION CONDITIONS.
   A. TERMINATE RATED PARTITIONS AT STRUCTURAL MEMBERS WITH A RATING GREATER THAN OR EQUAL TO THE PARTITION.
   B. INSTALL FRAMING AND GYP. BD. TO OFFSET AROUND STRUCTURAL MEMBERS OTHER OBSTRUCTIONS TO MAINTAIN THE FIRE RESISTANCE RATING.
   C. TERMINATE NON-RATED PARTITIONS AT STRUCTURAL MEMBERS WITH A CONTINUOS LAYER OF GYP. BD. TO MAINTAIN ACOUSTICAL, SMOKE, OR OTHER BARRIERS.
3. STOP STUDS AND GYP. BD. 1/2" BELOW LINE OF STRUCTURE AND SEAL.
   A. FIRE RESISTANCE RATED PARTITIONS SHALL BE INSTALLED WITH FIRE STOP SEALANT UNLESS NOTED OTHERWISE.
   B. NON-RATED PARTITIONS SHALL BE INSTALLED WITH ACOUSTICAL SEALANT UNLESS NOTED OTHERWISE.
   C. ALL OTHER PARTITIONS SHALL BE INSTALLED WITH SEALANT AS SCHEDULED.
4. REFER TO SPECIFICATION SCHEDULE FOR STUD SPACING AND LIMITING HEIGHTS FOR GYPSUM BOARD ASSEMBLIES.
5. ALLOW FOR 3" SQUARE STL. TUBE SUPPORTS @ 4'-0" O.C. FOR HALF WALLS WHERE STRUCTURAL DRAWINGS DO NOT PROVIDE FOR.
6. ACOUSTICAL NOTES:
   A. PROVIDE 2 STUDS BETWEEN PENETRATIONS (OUTLETS) ON OPPOSITE SIDES OF ACOUSTICALLY IMPROVED WALLS. SEAL PERIMETER OF EACH OUTLET WITH ACOUSTICAL SEALANT AND SEAL BACK OF OUTLET WITH OUTLET BOX PADS.



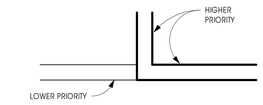
7. SEALING AT PIPE PENETRATION IN GYP. BD. WALL



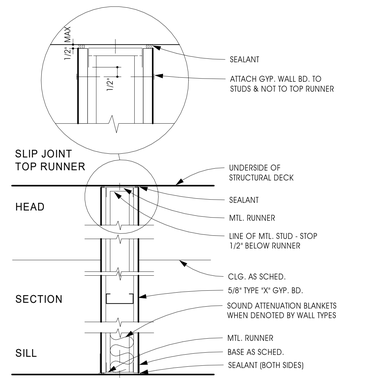
8. INSTALL BRACING AND FIRE RETARDANT TREATED WOOD BLOCKING FOR CASEWORK, EQUIPMENT, ETC. AT PARTITIONS AS REQUIRED USE 5/8" MOISTURE RESISTANT GYP. WALL BOARD AT ALL WET AREAS

WALL PRIORITY LEGEND

2 HR. FIRE & SMOKE WALL	PRIORITY 1 HIGHEST
2 HR. FIRE WALL	PRIORITY 2
2 HR. SHAFT WALL	PRIORITY 2
1 HR. FIRE & SMOKE WALL	PRIORITY 3
1 HR. FIRE WALL	PRIORITY 4
NON-RATED WALL	PRIORITY 5



9. COORDINATE WITH SPRAY-ON FIRE PROOFING AND PRE-INSTALL CLIPS, HANGERS, SUPPORTS ETC. FOR METAL STUD FRAMING AND ANY OTHER EQUIPMENT OR ASSEMBLIES REQUIRED BY THE CONTRACT DOCUMENTS.



9. REFER TO AND COORDINATE WITH FINISH SCHEDULE FOR ANY ADDITIONAL FINISHES NOT SHOWN WITH WALL PARTITION TYPES.

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REVISION HISTORY

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0	ISSUED FOR CONSTRUCTION	03/19/21

PROFESSIONAL SEALS

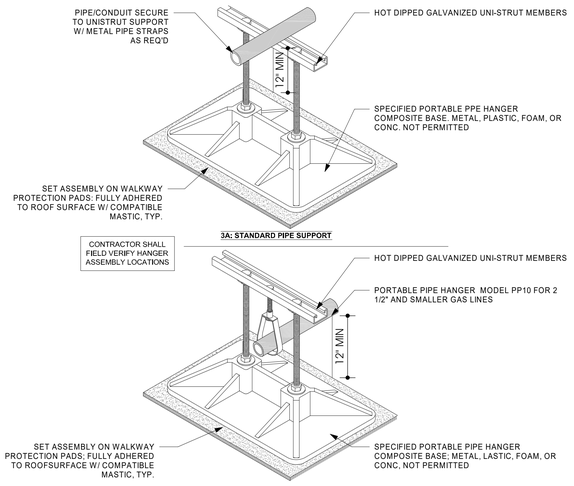
03/19/21

SODIUM HYPOCHLORITE BUILDING
NEW CONSTRUCTION FLOOR PLAN

DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

SH-A-101

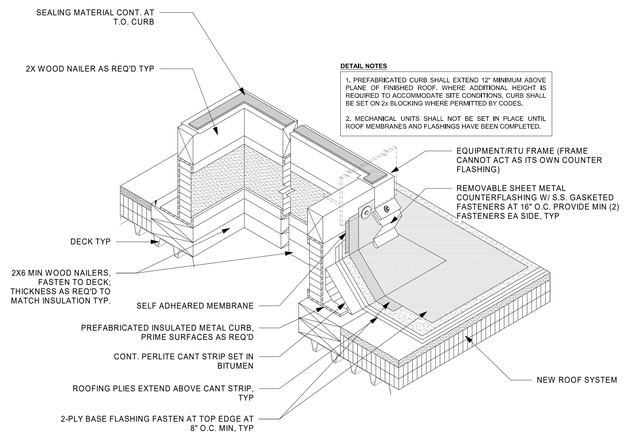
SHEET NUMBER



PORTABLE PIPE HANGER NOTES

1. PLACE HANGERS OVER STRUCTURAL SUPPORTS WHERE POSSIBLE EQ. SPACED AT 10'-0" O.C. MAX.; ATTACH ALL COMPONENTS IN ACCORDANCE WITH MFR'S. REQUIREMENTS.
2. USE PORTABLE PIPE HANGER MODEL NO. PS-1-2 FOR 2-1/2" TO 8" PIPE SIZES.
3. USE PORTABLE PIPE HANGER MODEL NO, PSE-2-2 FOR 2-1/2" AND LARGER PIPE SIZES WITH MULTIPLE PIPE RUNS.

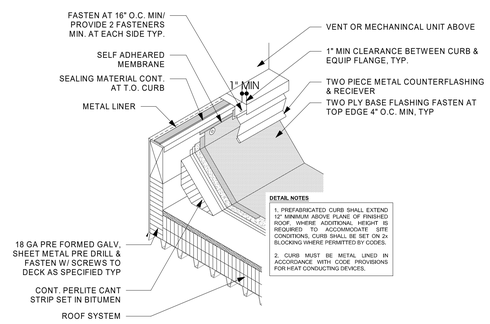
7 ROOF DETAIL 6
1" = 1'-0"



DETAIL NOTES

1. PREFABRICATED CURB SHALL EXTEND 12" MINIMUM ABOVE PLANE OF FINISHED ROOF. WHERE ADDITIONAL HEIGHT IS REQUIRED TO ACCOMMODATE SITE CONDITIONS, CURB SHALL BE SET ON 2x BLOCKING WHERE PERMITTED BY CODES.
2. MECHANICAL UNITS SHALL NOT BE SET IN PLACE UNTIL ROOF MEMBRANES AND FLASHINGS HAVE BEEN COMPLETED.

6 ROOF DETAIL 5
1 1/2" = 1'-0"



DETAIL NOTES

1. PREFABRICATED CURB SHALL EXTEND 12" MINIMUM ABOVE PLANE OF FINISHED ROOF. WHERE ADDITIONAL HEIGHT IS REQUIRED TO ACCOMMODATE SITE CONDITIONS, CURB SHALL BE SET ON 2x BLOCKING WHERE PERMITTED BY CODES.
2. CURB MUST BE METAL LINED IN ACCORDANCE WITH CODE PROVISIONS FOR HEAT CONDUCTING DEVICES.

5 ROOF DETAIL 4
1 1/2" = 1'-0"

◇ EXISTING KEYNOTES

35. EXISTING CONCRETE TANK WITH LINING
53. EXISTING AL GUARDRAIL SYSTEM: SIDE MOUNT
56. EXISITNG ALUMINUM LADDER
71. EXISTING ROOF ASSEMBLY OR ACCESSORY
72. EXISTING EXTERIOR WALL PANEL OR ACCESSORY
73. EXISTING GUTTER AND DOWNSPOUT SYSTEM
74. EXISTING ROOF PENETRATION
78. EXISTING WATER REPELLANT TYP @ EXT. HORIZONTAL CONC. SURFACES
82. REMOVEABLE FRP ACCESS COVER
151. HVAC EQUIPMENT OR ACCESSORY

○ NEW CONSTRUCTION KEYNOTES

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3 5' X 5' CONCRETE PAD
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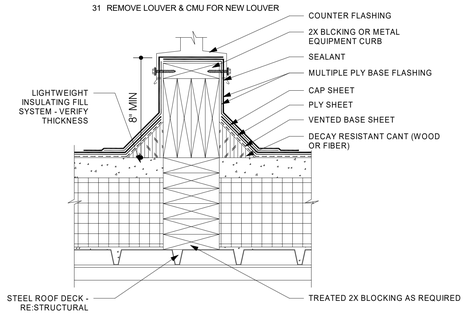
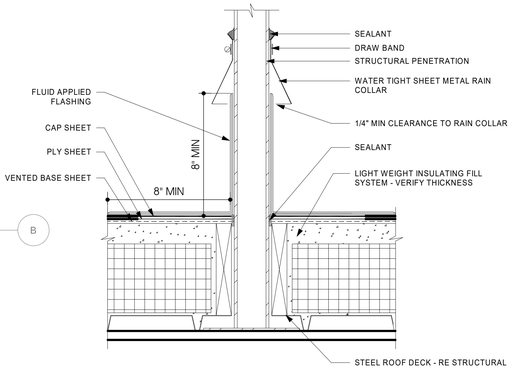
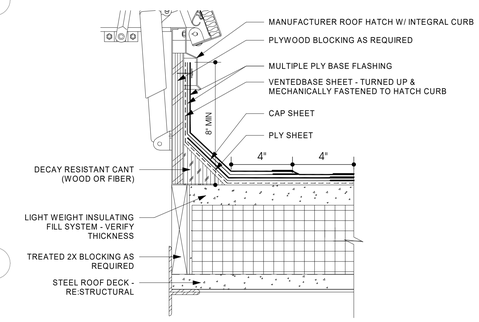
31 REMOVE LOUVER & CMU FOR NEW LOUVER



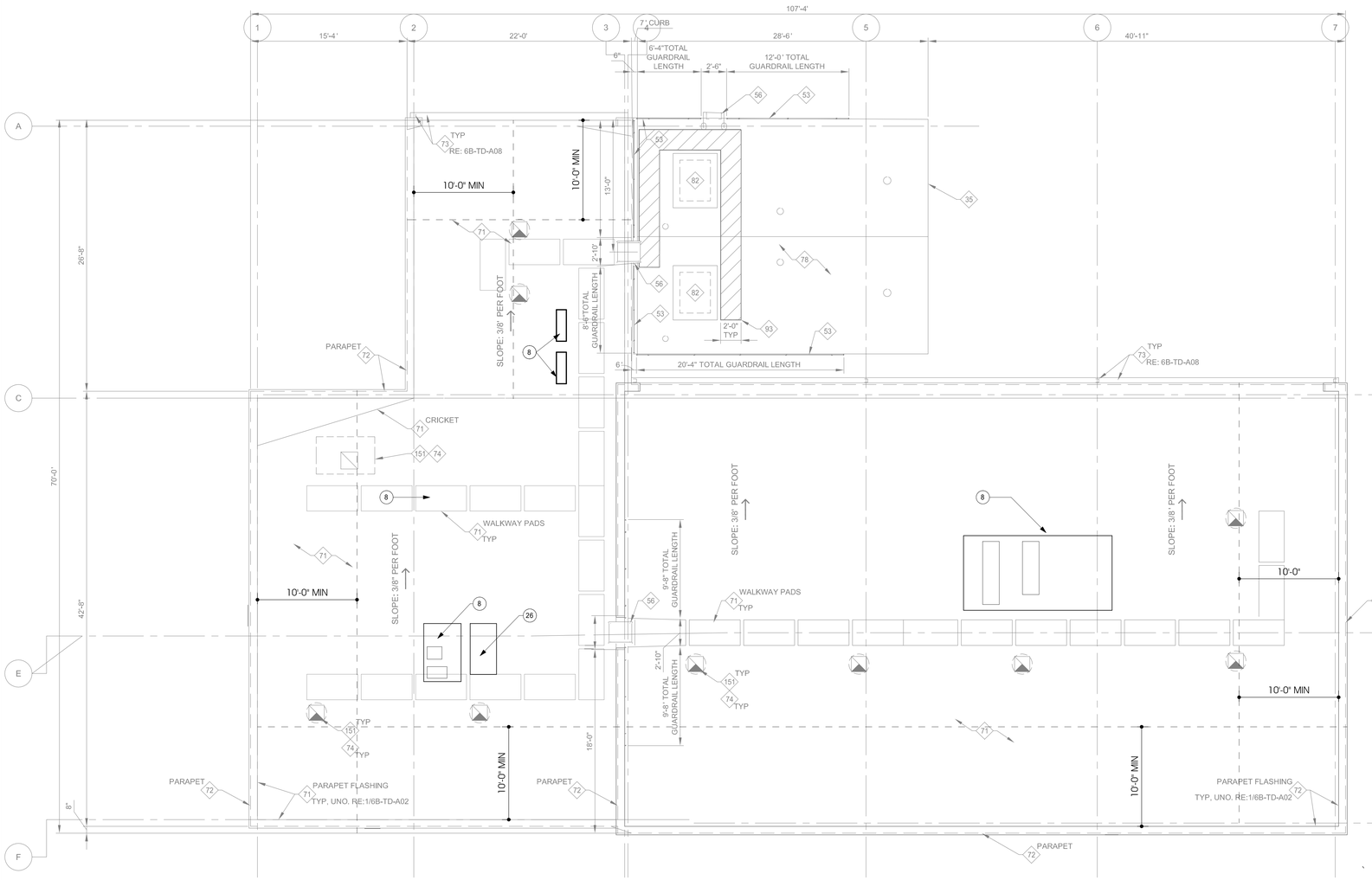
4 ROOF DETAIL 1
3" = 1'-0"



3 ROOF DETAIL 2
3" = 1'-0"



1 ROOF DETAIL 3
3" = 1'-0"



2 SODIUM HYPOCHLORITE BUILDING ROOF PLAN
3/16" = 1'-0"

TRUE NORTH PLANT NORTH

Page/

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HVAC IMPROVEMENTS PROJECT
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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	03/19/21

PROFESSIONAL SEALS

03/19/21

SODIUM HYPOCHLORITE BUILDING
NEW CONSTRUCTION ROOF PLAN

DRAWN BY GG	CHECKED BY FG
PROJECT NUMBER 20005	PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC	DATE 03/19/21

SH-A-102

SHEET NUMBER

◇ EXISTING KEYNOTES

31. EXISTING CONCRETE STRUCTURE
32. EXISTING CONCRETE CURB OR PAD OR WALL
41. EXISTING CMU 12 IN VOM BED WIDTH
53. EXISITNG AL GUARDRAIL SYSTEMP SIDE MOUNT
56. EXISTING ALUMINUM LADDER
92. WATER REPELLANT TYP ON CMU AND SLOPED CONC SILL AS INDICATED

○ NEW CONSTRUCTION KEYNOTES

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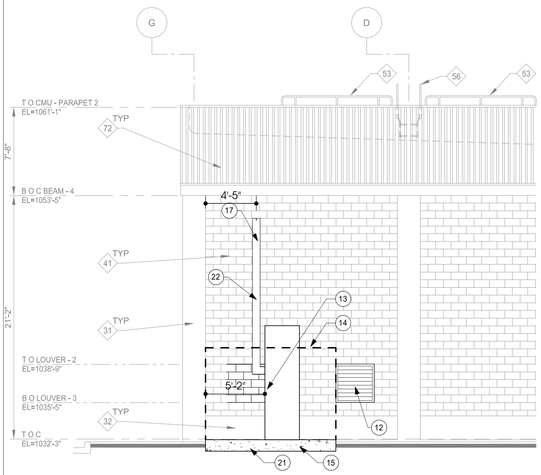
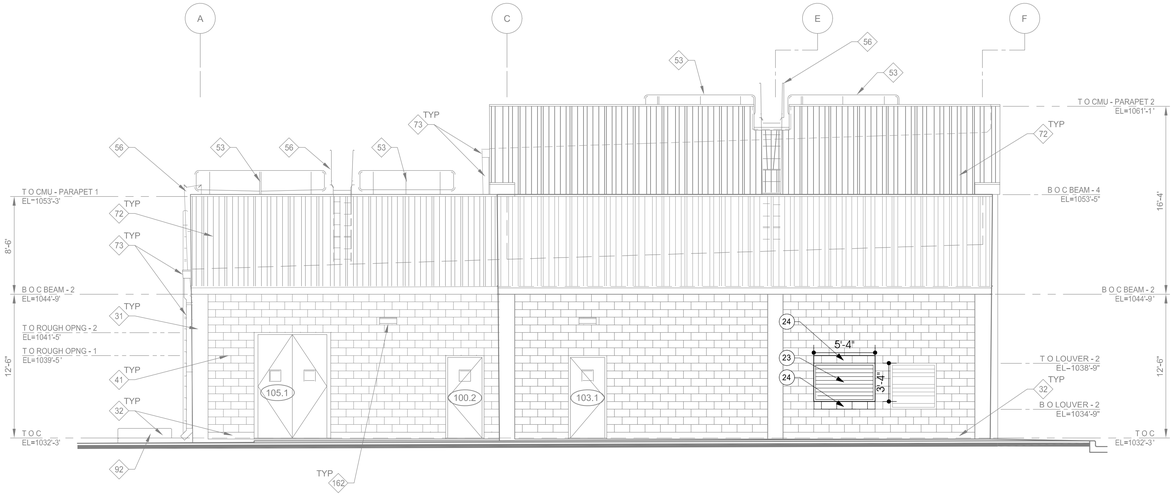
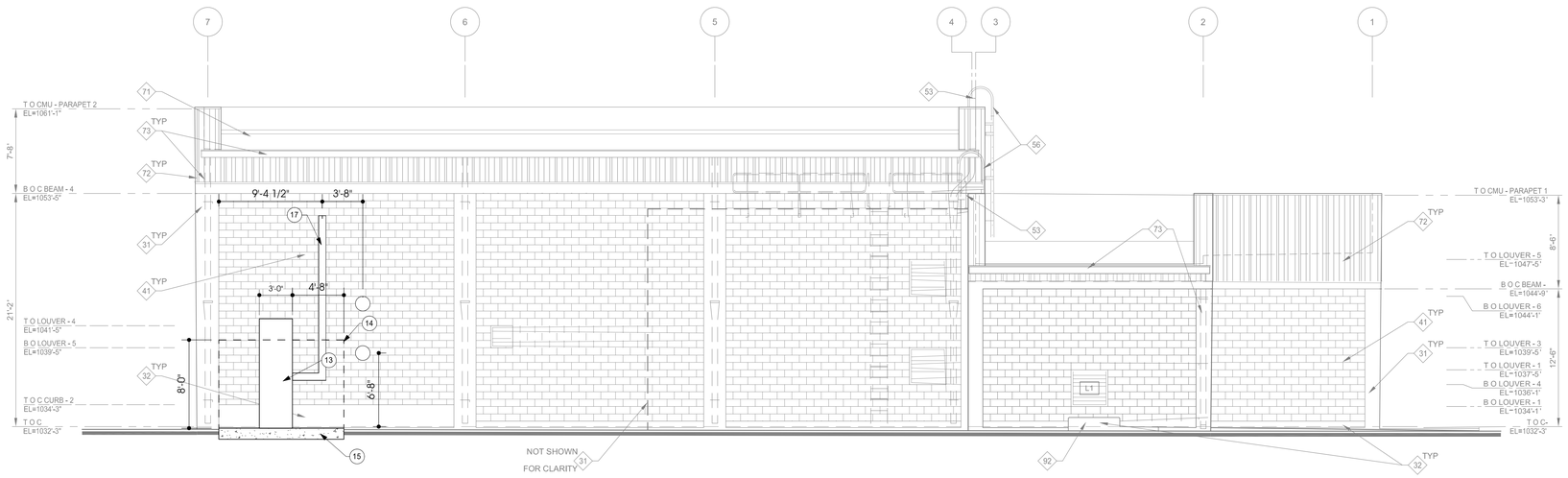


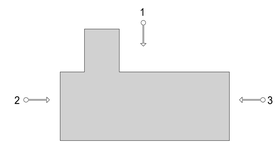
3 SODIUM HYPOCHLORITE BUILDING - NORTH PARTIAL ELEVATION
3/16" = 1'-0"



2 SODIUM HYPOCHLORITE SOUTH ELEVATION
3/16" = 1'-0"



1 SODIUM HYPOCHLORITE BUILDING WEST ELEVATION
3/16" = 1'-0"



KEY PLAN

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REGISTERED ARCHITECT 16237 STATE OF TEXAS

03/19/21

SODIUM HYPOCHLORITE BUILDING NEW CONSTRUCTION ELEVATIONS

DRAWN BY GG
CHECKED BY FG
PROJECT NUMBER 20005
PROJECT ABBREVIATION COA HWTP
ORIGINAL ISSUE IFC
DATE 03/19/21

SH-A-201

SHEET NUMBER

GENERAL STRUCTURAL NOTES

PART I - DESIGN CRITERIA

A. GENERAL BUILDING CODE

1. International Building Code 2015.

B. GRAVITY LOADS

1. New gravity design loads will be based on the weight of any new equipment added to the existing structures.

C. WIND LOADS

1. Wind pressures are based on the provisions of the American Society of Civil Engineers, minimum design loads for buildings and other structures, ASCE 7-10 and the following criteria:
   a. Ultimate design wind speed (VULT): 115 MPH (3 second gust)
   b. Nominal design wind speed (VASD): 90 MPH (3 second gust)
   c. Building risk category: II
   d. Wind exposure category: B
   e. Internal pressure coefficient (GCPI): +0.18/-0.18

D. SEISMIC DESIGN CRITERIA

1. The structure and components of the building have been designedin accordance with aforementioned building code with the following criteria:
   a. Seismic importance factor: 1.0
   b. Seismic design category: A

E. ROOFTOP EQUIPMENT ANCHORAGE

1. All rooftop and structure mounted equipment curbs, rooftop and structure mounted mechanical equipment, equipment tie-downs, and connections of all equipment to building structure for wind loading are to be designed and engineered by a registered Specialty Engineer retained by the mechanical equipment supplier. Signed and sealed drawings and calculations are to be submitted to the engineer of record for review and approval. The equipment manufacturer shall provide the attachment of the unit to the structure and submit to the engineer loads, locations, and methods of attachment. The structural engineer will make provisions in the design of the primary structural frame to accomodate the loads and attachments submitted by the manufacturer.

PART II - STRUCTURAL STEEL

A. MATERIAL

1. Hot Rolled Structural Members: All hot rolled steel plates, shapes, sheet piling, and bars shall be new steel conforming to ASTM Specification A 6.

2. ASTM Specification and Grade: Clearly mark the grade of steel on each piece, with a distinguishing mark visible from floor surfaces, for the purpose of field inspection of proper grade of steel. Unless noted otherwise on the drawings, structural steel shall be as follows:
   a. W- and WT-Shapes: ASTM A 992.
   b. M- and S-Shapes: ASTM A 36.
   c. C-Shapes: ASTM A 36.
   d. L-Shapes: ASTM A 36.
   e. Round HSS: ASTM A 500, Grade B (Fy=42 ksi).
   f. Rectangular HSS: ASTM A 500, Grade B (Fy=46 ksi).
   g. Steel Pipes: ASTM A 53 (Types E or S), Grade B.
   h. Base Plates:
      1) Plates to 4" thick inclusive: ASTM A36.
   i. Edge Angles, Bent Plates, Angle Hangers, and Angle Kickers: ASTM A 36.
   j. Connection Material:
      1) Beam Column Continuity Plates and Doubler Plates: ASTM A 572, Grade 50.
      2) All connection material, except as noted otherwise herein or on the drawings, including bearing plates, gusset plates, stiffener plates, filler plates, angles, etc. shall conform to ASTM A 572, Grade 50 unless a higher grade of steel is required by strength and provided the resulting sizes are compatible with the connected members.
   k. Other Steel: Any other steel not indicated otherwise shall conform to ASTM A 992 or ASTM A 572, Grade 50, except plates and angles that shall be ASTM A 36.

B. WELDING

1. Unless noted otherwise, electrodes for welding shall conform to E70XX (SMAW), F7XX-EXXX (SAW), ER70S-X (GMAW), or E7XT-X (FCAW).

C. ALL STEEL THAT IS EXPOSED TO EXTERIOR SHALL BE HOT DIPPED GALVANIZED

PART III - SPECIAL INSPECTIONS

A. The Owner's testing laboratory shall provide special inspection services in accordance with the International Building Code for the following items.

TABLE 1705.3
REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

SR.NO	TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
1	Inspect reinforcement, including prestressing tendons, and verify placement	-	X	ACI 318 Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2	Reinforcing bar welding: a. Verify weldability of reinforcing bars other than ASTM A706; b. Inspect single-pass fillet welds,maximum 5/16"; and c. Inspect all other welds.	- - -	- - -	AWS D1.4; ACI 318: 26.6.4 AWS D1.4; ACI 318: 26.6.4 AWS D1.4; ACI 318: 26.6.4	
3	Inspect anchors cast in concrete	-	-	ACI 318: 17.8.2	
4	Inspect anchors post-installed in hardened concrete members a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads b. Mechanical anchors and adhesive anchors not defined in 4.a	X -	- X	ACI 318: 17.8.2.4 ACI 318: 17.8.2	
5	Verify use of required design mix	-	X	ACI 318: Ch.19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6	Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	X	-	ASTM C172; ASTM C31; ACI 318: 26.4, 26.12	1908.1
7	Inspect concrete and shotcrete placement for proper application techniques	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8	Verify maintenance of specified curing temperature and techniques	-	X	ACI 318: 26.5.3-26.5.5	1908.9
9	Inspect prestressed concrete for: a. Application of prestressing forces; and b. Grouting of bonded prestressing tendons	- -	- -	ACI 318: 26.10 ACI 318: 26.10	
10	Inspect erection of precast concrete members	-	-	ACI 318: Ch. 26.8	
11	Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs	-	X	ACI 318: 26.11.2	
12	Inspect formwork for shape, location and dimensions of the concrete member being formed	-	X	ACI 318: 26.11.1.2(b)	

PART III - SPECIAL INSPECTIONS - CONTINUED

TABLE 1705.4
REQUIRED SPECIAL INSPECTIONS AND TESTS OF MASONRY CONSTRUCTION

SR.NO	TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD
1	Level A: Minimum quality assurance program for masonry in Risk Category I, II, or III structures and designed in accordance with Part 4 or Appendix A	-	X	ACI 530.1 Table 3.1.1
2	Level B: Minimum quality assurance program for masonry in Risk Category I, II, or III structures and designed in accordance with chapters other than those in Part 4 or Appendix A Minimum quality assurance program for masonry in Risk Category IV structures and designed in accordance with Chapter 12 or 13	-	-	ACI 530.1 Table 3.1.2 ACI 530.1 Table 3.1.2
3	Level C: Minimum quality assurance program for masonry in Risk Category IV structures and designed in accordance with chapters other than those in Part 4 or Appendix A	-	-	ACI 530.1 Table 3.1.3
4	Vertical Masonry Foundation Elements shall be inspected in accordance with IBC Section 1705.4	-	-	

B. STATEMENT OF SPECIAL INSPECTIONS

1. Special inspection is required for the items listed above.

2. Refer to Specifications and items above for type and extent of each special inspection and each test.

PART IV - SUBMITTALS

A. SUBMITTAL LIST AND SCHEDULE

1. The General Contractor shall prepare a detailed list and schedule of all submittal items to be sent to the Structural Engineer prior to the start of construction. This list shall be updated and revised and kept current as the job progresses. The submittal list shall be organized as shown below:
   a. Shop Drawings
   b. Design Calculations
   c. Product Data, Certificates, Reports, and Other Literature

B. SUBMITTALS TO BE PROVIDED TO STRUCTURAL ENGINEER

1. Structural Submittals: In addition to the submittals required by the structural specifications, the following submittals shall be provided:
   a. Layout of Embedded Items (Plates, Angles, Bolts, Conduit, etc.) or Items Attached to the Structural Frame for Building Cladding Attachment or for Attachment of Other Items.
   b. Composite metal deck shop drawings
   c. Concrete mix design
   d. Anchorage to existing concrete

2. Submittal Requirements:
   a. All shop drawings must be reviewed and electronically stamped by the General Contractor prior to submittal.
   b. Contractor shall provide the submittal in electronic portable document format (PDF) per the Specifications.
   c. The omission from the shop drawings of any materials required by the Contract Documents to be furnished shall not relieve the Contractor of the responsibility of furnishing and installing such materials, regardless of whether the shop drawings have been reviewed and approved.

C. REPRODUCTION

1. The use of electronic files or reproductions of these contract documents by any contractor, subcontractor, erector, fabricator, or material supplier in lieu of preparation of shop drawings signifies their acceptance of all information shown hereon as correct, and obligates themselves to any job expense, real or implied, arising due to any errors that may occur hereon.

STRUCTURAL SYMBOLS AND NOTATIONS

MATERIAL IDENTIFICATION SYMBOLS

THE FOLLOWING MATERIAL IDENTIFICATION SYMBOLS MAY BE USED IN THE SECTIONS AND DETAILS:

ALUMINUM · CAST-IN-PLACE CONCRETE · EARTH · EARTH (UNDISTURBED) · EXISTING CONSTRUCTION · GRAVEL · GROUT

MASONRY · POLYSTYRENE · RIGID INSULATION · ROCK · STEEL · STRUCTURAL PRECAST CONCRETE · WOOD

THE FOLLOWING MATERIAL IDENTIFICATION SYMBOLS MAY BE USED IN THE PLANS:

STEEL COLUMN · CONCRETE COLUMN · CONCRETE WALL · LOADBEARING MASONRY WALL · NON-LOADBEARING MASONRY WALL · STRUCTURAL PRECAST WALL · GRATING

EXISTING
BOUNDARY OF EXISTING CONSTRUCTION

DEMO W14x22
BOUNDARY OF EXISTING CONSTRUCTION TO BE DEMOLISHED

BOUNDARY OF FUTURE EXPANSION

BOUNDARY OF CONCRETE TOPPING SLAB POURED ON SUBSTRUCTURE

SYMBOLIC LINEWORK

THE FOLLOWING SYMBOLIC LINEWORK MAY BE USED THROUGHOUT THE DRAWINGS:

REFERENCE GRID LINE SYMBOL
CENTERLINE SYMBOL
PLAN MATCHLINE SYMBOL
NON-STRUCTURAL LINE SYMBOL
WELDED WIRE REINFORCEMENT SYMBOL
STEEL JOIST LINE SYMBOL
OPENING LINE SYMBOL

VIEW REFERENCE SYMBOLS

THESE FOLLOWING SYMBOLS MAY BE USED THROUGHOUT THE DRAWINGS TO REFER TO OTHER VIEWS:

REFERENCE OBJECT
DETAIL NUMBER OR LETTER
A
S-302
SHEET NUMBER
FRAMING ELEVATION SYMBOL

DETAIL NUMBER OR LETTER
SHEET NUMBER
A
S-302
AREA OR ITEM BEING DETAILED
DETAIL REFERENCE SYMBOL

REFERENCE OBJECT
DETAIL NUMBER OR LETTER
SHEET NUMBER
OVERALL SECTION SYMBOL

REFERENCE OBJECT
DETAIL NUMBER OR LETTER
SHEET NUMBER
PARTIAL SECTION SYMBOL

UNIVERSAL SYMBOLS

THESE FOLLOWING SYMBOLS MAY BE USED THROUGHOUT THE DRAWINGS:

2
AREA OR ITEM BEING REVISED
REVISION NUMBER OR LETTER
REVISION CLOUD SYMBOL

ELEVATION OF REFERENCE OBJECT OR LOCATION
10'-4"
TOP OF SLAB
REFERENCE OBJECT OR LOCATION
ELEVATION DESIGNATION SYMBOL

GRID LABEL
B
REFERENCE GRID INDICATOR SYMBOL

WP
WORK POINT SYMBOL

FLAT FACE BREAK MARK
CURVED FACE BREAK MARK
LINE BREAK MARK

PLAN SYMBOLS

THE FOLLOWING SYMBOLS MAY BE USED THROUGHOUT THE PLANS.

SLOPE TRANSITION INDICATOR SYMBOL

SLOPE EDGE
SLOPE DOWN
RAMP SLOPE INDICATOR SYMBOL

12
5
HORIZONTAL DIMENSION
VERTICAL DIMENSION
SLOPE PITCH INDICATOR SYMBOL

SIZE OF STEP (IF PROVIDED)
6"
STEP INDICATOR SYMBOL

SIZE OF STEP (IF PROVIDED)
8"
STEP TO SLOPE INDICATOR SYMBOL

RIDGE INDICATOR SYMBOL

N
PROJECT NORTH ARROW SYMBOL

Bx
BORING LOCATION SYMBOL

2
KEYNOTE INDICATOR SYMBOL

S12
SLAB OR DECK TYPE (IF PROVIDED)
ONE-WAY SLAB OR DECK SPAN INDICATOR SYMBOL

S12
SLAB OR DECK TYPE (IF PROVIDED)
TWO-WAY SLAB SPAN INDICATOR SYMBOL

DEAD END
STRESSING END
POST-TENSIONING TENDON SYMBOLS

SMALL OPENINGS IN STRUCTURAL SLAB OR DECK

OPE
N
LARGE OPENING IN STRUCTURAL SLAB OR DECK

REINFORCING STEEL WITH 90° HOOK

REINFORCING STEEL WITH 180° HOOK

FPx
CONCRETE FRAMING PENETRATION

FPx
STEEL FRAMING PENETRATION

FORCE (KIPS)
50
PASS-THROUGH FORCE SYMBOL

BRACE/KICKER DIRECTION INDICATOR SYMBOL

XXX-x
3,500 LBS
BELOW
ROUGH OUTLINE OF UNIT
UNIT NAME (IF PROVIDED)
MAXIMUM TOTAL ALLOWABLE WEIGHT OF UNIT OR EQUIPMENT INCLUDING WEIGHT OF CURB
IF PROVIDED, INDICATES UNIT IS HANGING BELOW FLOOR OR ROOF
MECHANICAL UNIT OR OTHER EQUIPMENT

CONCRETE ANNOTATION STYLES

THE FOLLOWING STRUCTURAL ANNOTATIONS MAY APPEAR ON THE CONCRETE FRAMING PLANS

4-#4x5'-0" TOP

REINFORCING STEEL NOTED IN PLAN SHALL BE LOCATED ACCORDING TO PLAN NOTES, TYPICAL VIEWS, AND SCHEDULES. HOOKS ARE INDICATED IN PLAN WHERE REQUIRED FOR NON-SCHEDULED REINFORCING STEEL. WHERE HOOKS ARE SHOWN, LENGTHS PROVIDED DO NOT INCLUDE HOOK.

A SINGLE ARROWED LINE INDICATES THE EXTENT OVER WHICH THE REINFORCING STEEL IS TO BE DISTRIBUTED WITH AN EQUAL SPACING BETWEEN BARS.

STEEL ANNOTATION STYLES

JOIST
LINE OF BRIDGING
LOCATION OF CROSS-BRIDGING (IF PROVIDED)

ABBREVIATIONS

THE FOLLOWING ABBREVIATIONS MAY BE USED IN THE DRAWINGS:

@	AT	LLH	LONG LEG HORIZONTAL
&	AND	LLV	LONG LEG VERTICAL
#	NUMBER	LONG	LONGITUDINAL
ø	ROUND, DIAMETER	LSH	LONG SIDE HORIZONTAL
ADDL	ADDITIONAL	LSLP	LONG-SLOTTED HOLE PARALLEL
AESS	ARCHITECTURAL EXPOSED STRUCTURAL STEEL	LSLT	LONG-SLOTTED HOLE TRANSVERSE
		LSV	LONG SIDE VERTICAL
AFF	ABOVE FINISHED FLOOR	LWC	LIGHTWEIGHT CONCRETE
AHR	ANCHOR	M	MOMENT
AHU	AIR HANDLING UNIT	MAS	MASONRY
ALT	ALTERNATE	MAX	MAXIMUM
APPROX	APPROXIMATE	MC	MOMENT CONNECTION
AR	ANCHOR ROD	MECH	MECHANICAL
ARCH	ARCHITECTURAL	MEZZ	MEZZANINE
BC	BOTTOM OF COLUMN	MFR	MANUFACTURER
BF	BRACED FRAME	MH	HORIZONTAL MOMENT
BLDG	BUILDING	MIN	MINIMUM
BM	BEAM	MISC	MISCELLANEOUS
BO	BOTTOM OF	MTL	METAL
BOD	BOTTOM OF DECK	NF	NEAR FACE
BOT	BOTTOM	NIC	NOT IN CONTRACT
BRDG	BRIDGING	NS	NEAR SIDE
BRG	BEARING	NTS	NOT TO SCALE
BTWN	BETWEEN	NWC	NORMALWEIGHT CONCRETE
C	CAMBER	OC	ON CENTER
CANTIL	CANTILEVER	OD	OUTSIDE DIAMETER
CFSF	COLD-FORMED STEEL FRAMING	OPH	OPPOSITE HAND
CIP	CAST-IN-PLACE	OPNG	OPENING
CJ	CONSTRUCTION/CONTROL JOINT	OPP	OPPOSITE
CJP	COMPLETE JOINT PENETRATION	OVS	OVERSIZED HOLE
CL	CENTERLINE	P	AXIAL LOAD
CMU	CONCRETE MASONRY UNIT	PAF	POWDER ACTUATED FASTENER
COL	COLUMN	PAR	PARALLEL
CONC	CONCRETE	PCC	PRECAST CONCRETE
CONN	CONNECTION	PCF	POUNDS PER CUBIC FOOT
CONSTR	CONSTRUCTION	PCY	POUNDS PER CUBIC YARD
CONT	CONTINUOUS	PERP	PERPENDICULAR
COORD	COORDINATE	PL	PLATE
COV	COVER	PLF	POUNDS PER LINEAR FOOT
CPRS	COMPRESSIBLE	PJP	PARTIAL JOINT PENETRATION
CTRS	CENTERS	PRELIM	PRELIMINARY
db	BAR DIAMETER	PROP	PROPERTY
DBA	DEFORMED BAR ANCHOR	PSF	POUNDS PER SQUARE FOOT
DCW	DEMAND CRITICAL WELD	PSI	POUNDS PER SQUARE INCH
DET	DETAIL	PT	POST-TENSION(ED)
DIA	DIAMETER	QTY	QUANTITY
DIM	DIMENSION	R	REACTION
DWA	DEFORMED WIRE ANCHOR	RAD	RADIUS
DWG	DRAWING	REF	REFERENCE
EA	EACH	REINF	REINFORCEMENT
EF	EACH FACE	REM	REMAINDER
EJ	EXPANSION JOINT	REQD	REQUIRED
EL	ELEVATION	REV	REVISION
ELEV	ELEVATOR	RS	ROCK SOCKET
EMBED	EMBEDMENT, EMBEDDED	RTU	ROOF TOP UNIT
ENGR	ENGINEER	SC	SLIP CRITICAL
EQ	EQUAL	SCHED	SCHEDULE(D)
EQUIP	EQUIPMENT	SDS	SELF-DRILLING SCREW
EQUIV	EQUIVALENT	SECT	SECTION
EW	EACH WAY	SHT	SHEET
EXIST	EXISTING	SIM	SIMILAR
EXP	EXPANSION	SLBB	SHORT LEG BACK TO BACK
EXT	EXTERIOR	SLRS	SEISMIC LOAD RESISTING SYSTEM
FAB	FABRICATE	SOG	SLAB-ON-GRADE
f'c=	28 DAY CONCRETE STRENGTH=	SPA	SPACING
f'm=	28 DAY MASONRY STRENGTH=	SPEC	SPECIFICATION
FD	FLOOR DRAIN	SPRT	SUPPORT
FDTN	FOUNDATION	SQ	SQUARE
FF	FAR FACE	SS	STAINLESS STEEL
FIN	FINISH(ED)	SSLP	SHORT-SLOTTED HOLE PARALLEL
FLR	FLOOR	SSLT	SHORT-SLOTTED HOLE TRANSVERSE
FS	FAR SIDE	STD	STANDARD
FTG	FOOTING	STIF	STIFFENER
FUT	FUTURE	STIR	STIRRUP
FV	FIELD VERIFY	STL	STEEL
Fy=	YIELD STRENGTH=	STRUCT	STRUCTURE, STRUCTURAL
GALV	GALVANIZE(D)	SW	SHEAR WALL
GEN	GENERAL	SYMM	SYMMETRIC, SYMMETRICAL
GR	GRADE	T	TORSION
H	HORIZONTAL REACTION	TC	TOP OF COLUMN
HGR	HANGER	THD	THREADED
HORIZ	HORIZONTAL	TO	TOP OF
HSA	HEADED STUD ANCHOR	TOC	TOP OF CONCRETE
HSS	HOLLOW STRUCTURAL SECTION	TOM	TOP OF MASONRY
ID	INSIDE DIAMETER	TOS	TOP OF STEEL, TOP OF SLAB
INFO	INFORMATION	TRANS	TRANSVERSE
INT	INTERIOR	TYP	TYPICAL
JT	JOINT	UNO	UNLESS NOTED OTHERWISE
K	KIPS (1000 LBS)	VERT	VERTICAL
KSF	KIPS PER SQUARE FOOT	WF	WIDE FLANGE
KSI	KIPS PER SQUARE INCH	WP	WORK POINT
LBS	POUNDS	WS	WATERSTOP
Ld	DEVELOPMENT LENGTH	WT	WEIGHT
LLBB	LONG LEG BACK TO BACK	WWR	WELDED WIRE REINFORCEMENT
		XS	EXTRA STRONG
		XXS	DOUBLE EXTRA STRONG

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

STATE OF TEXAS
RUBEN MARTINEZ
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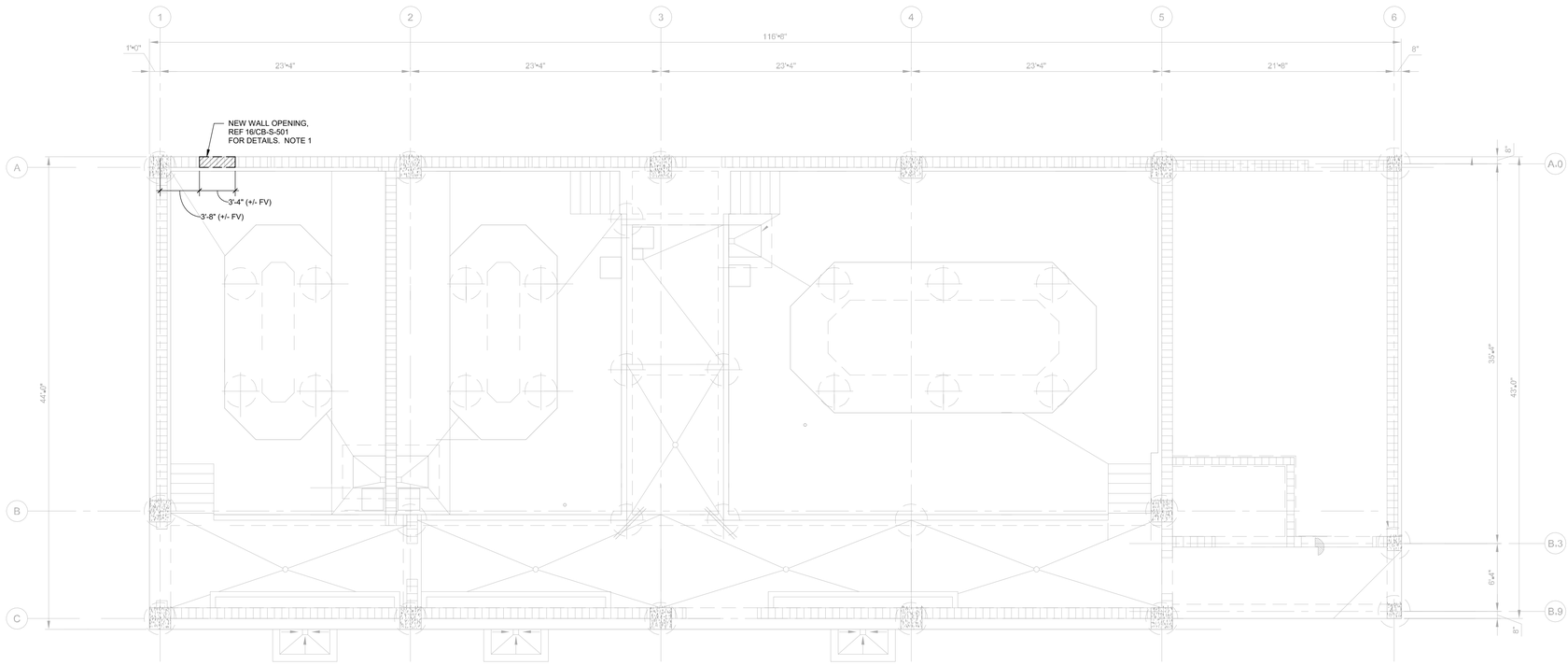
PROFESSIONAL ENGINEER
03/19/2021
Martinez Engineering, LLC
TBPE Firm Registration No. F-18729

GENERAL STRUCTURAL NOTES

DRAWN BY	CHECKED BY
SS	PP
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

S-001
SHEET NUMBER



NOTES:

1. REFER TO ARCH FOR LOCATION AND SIZE OF NEW OPENING.

1 PLAN - CHEMICAL BUILDING - LOWER LEVEL
NO SCALE

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CHEMICAL BUILDING FLOOR PLANS AND NOTES

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SS	PP
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CB-S-101
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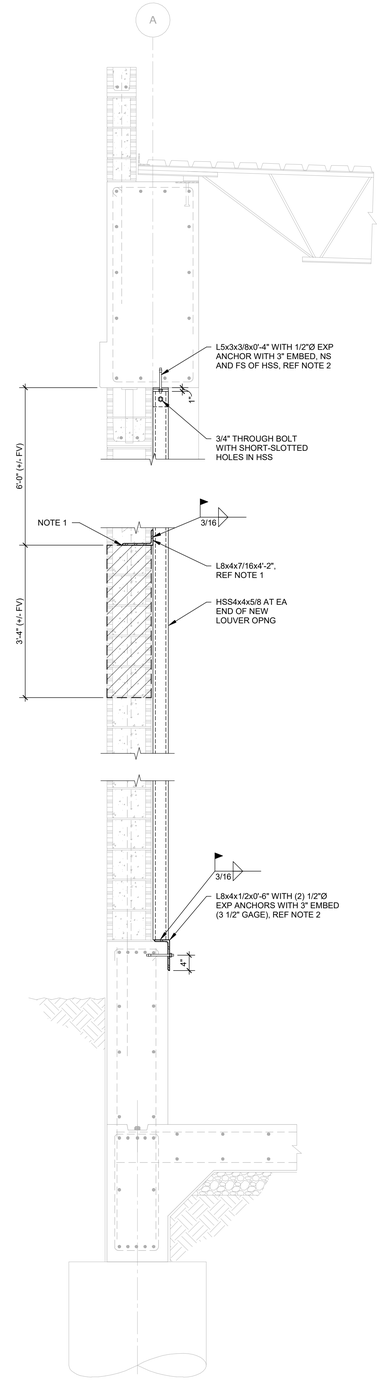

NOTES:

1. MAKE A CUT IN THE GROUT AND INSERT ANGLE AS SHOWN.
2. DO NOT DAMAGE EXISTING REINFORCEMENT WITH DRILLING OPERATION FOR DOWELS OR ANCHORS.

16 NEW WALL OPENING IN CMU WALL
NO SCALE

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

STATE OF TEXAS
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CHEMICAL BUILDING DETAILS

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PROJECT NUMBER: 119401	PROJECT ABBREVIATION: COA HWTP
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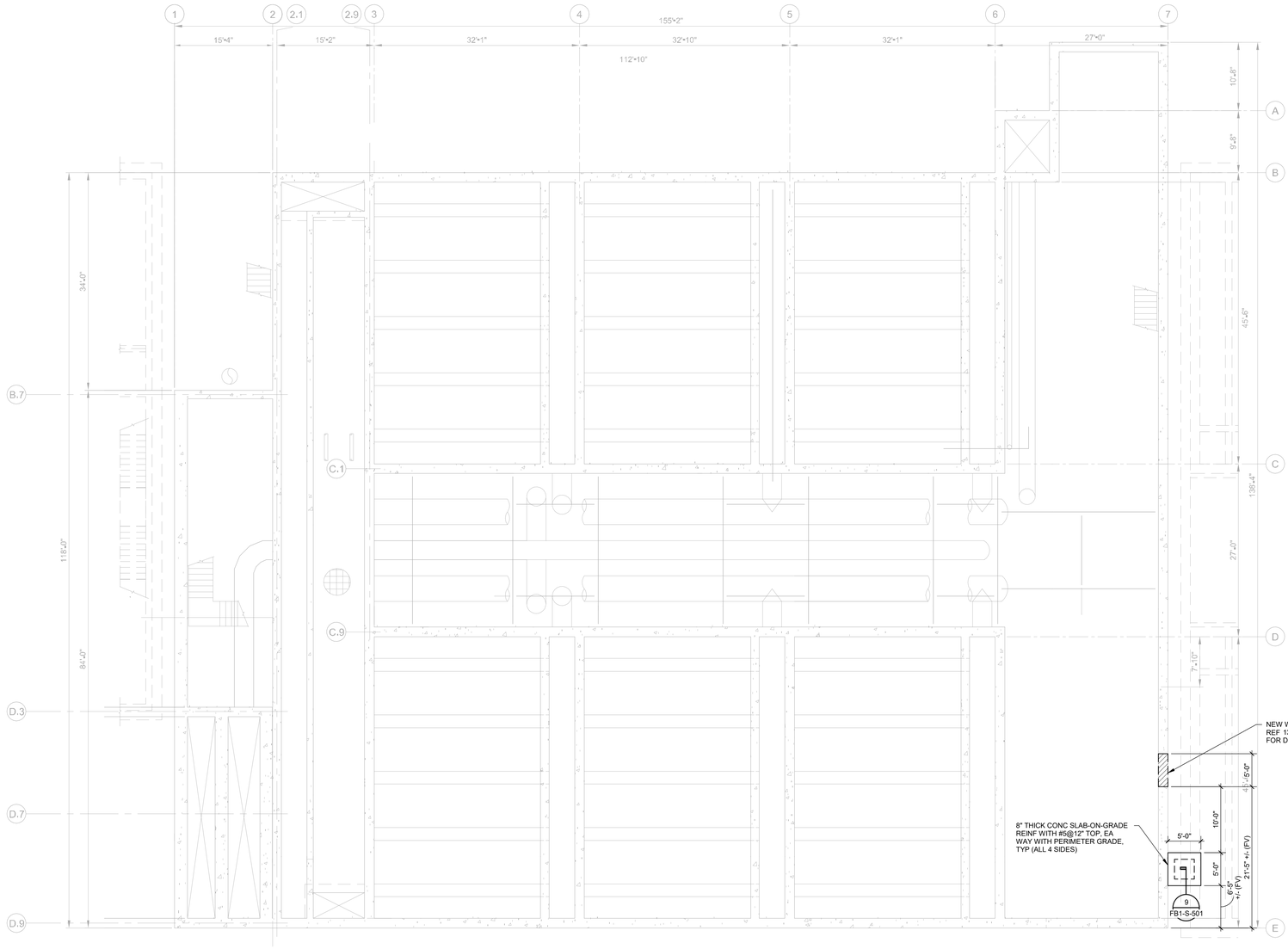

NOTES:

1. REFER TO ARCH FOR LOCATION AND SIZE OF NEW OPENING.

1 PLAN - FILTER BUILDING - LOWER LEVEL
1/8" = 1'-0"

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

STATE OF TEXAS
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03/19/2021

Martinez Engineering, LLC
TBPE Firm Registration No. F-16725

FILTER BUILDING FLOOR PLANS AND NOTES

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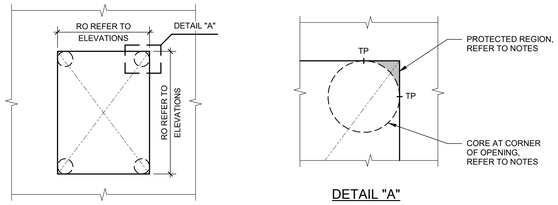
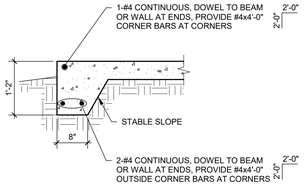


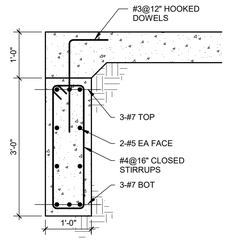
DETAIL "A"

NOTES:
1. ROUGH OPENING THROUGH CONCRETE WALL DEFINED AS RO ON THIS ELEVATION.
2. CORE THROUGH EXISTING WALL AT EACH CORNER. CORE SHOULD BE LOCATED SUCH THAT THE TANGENT OF THE CORE DOES NOT EXTEND PAST DEFINED LIMIT OF DEMOLITION.
3. CUT THROUGH WALL WITH A LINE THAT JOINS EACH CORE TANGENT POINT (TP).
4. THE PROTECTED REGION IN THE VERY CORNER OF THE PANEL SHALL NOT BE CUT THROUGH UNTIL THE PRIOR STEPS HAVE BEEN COMPLETED AND WITH CARE SO AS NOT TO EXTEND BEYOND THE EXTENTS DEFINED HEREIN.

5 TYPICAL OPENINGS CUT INTO AN EXISTING CONCRETE WALL
NO SCALE

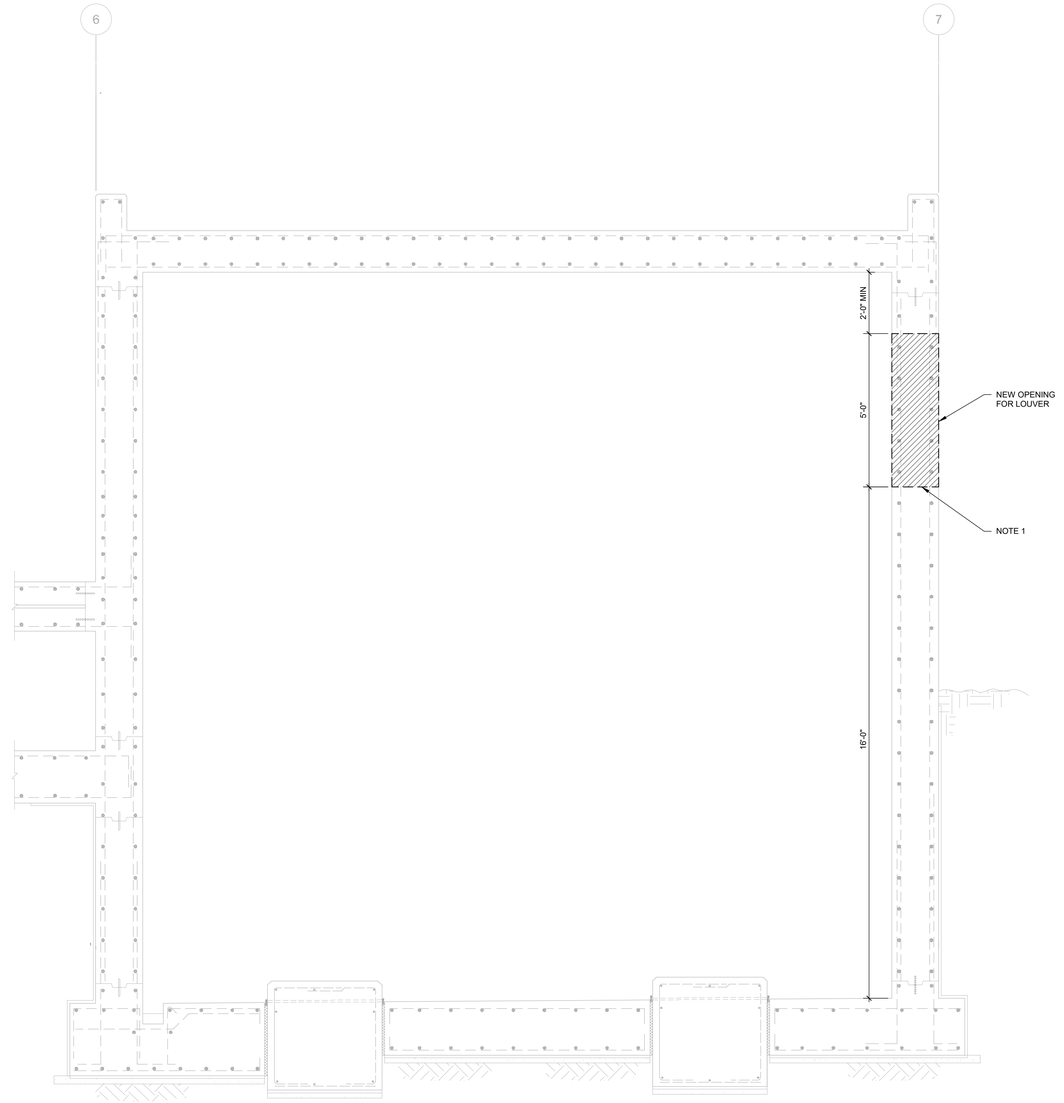


10 TYPICAL EXTERIOR SLAB-ON-GRADE TURNDOWN
NO SCALE



NOTES:
1. SLAB-ON-GRADE REINF NOT SHOWN FOR CLARITY.

9 SECTION
3/4" = 1'-0"



NOTES:
1. ENSURE OPENING IN CONCRETE WALL IS MINIMUM 1'-0" ABOVE GRADE.

13 NEW WALL OPENING IN CONCRETE WALL
NO SCALE

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

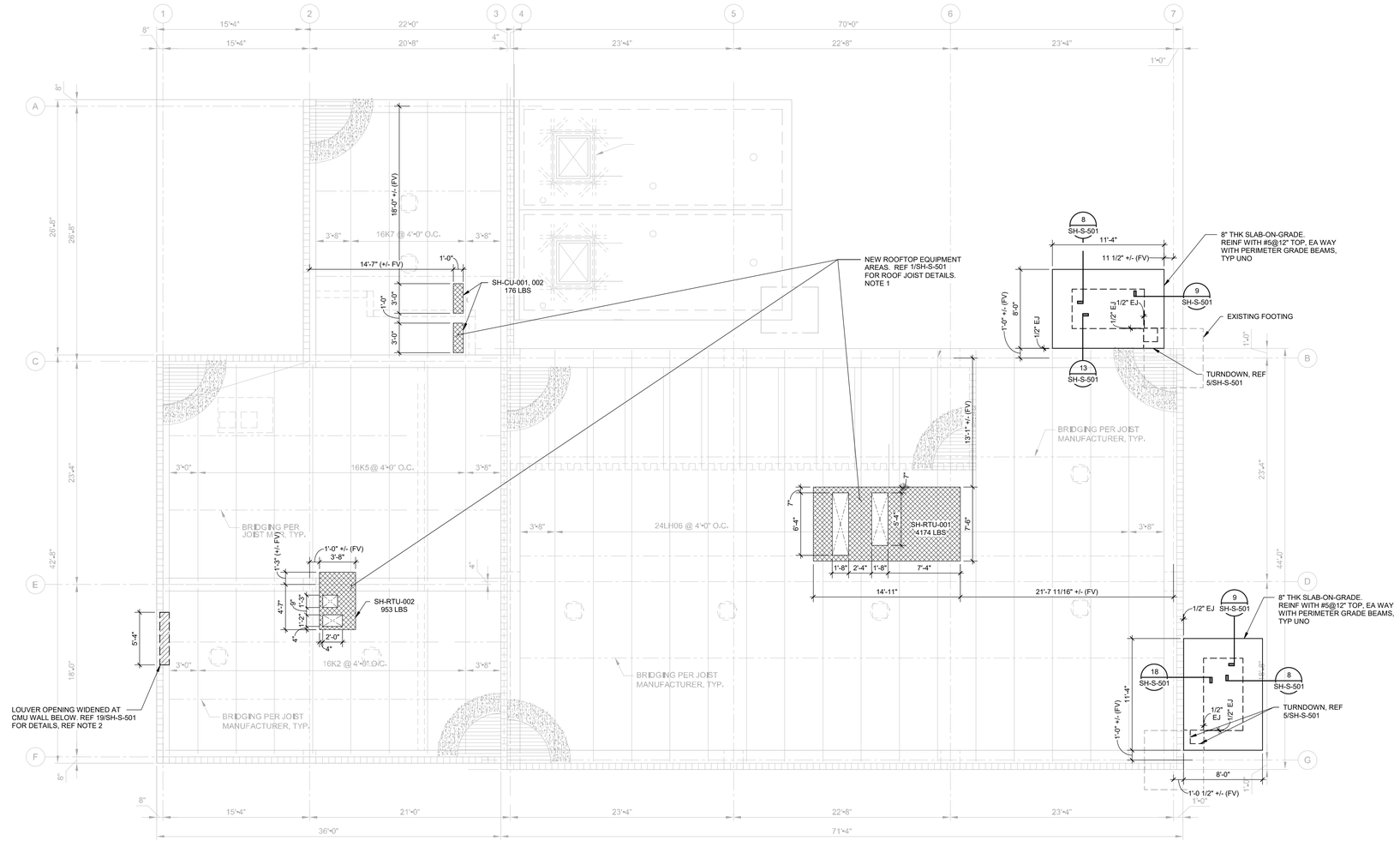
PROFESSIONAL SEALS

STATE OF TEXAS
RUBEN MARTINEZ
86985
LICENSED
PROFESSIONAL ENGINEER
03/19/2021
Martinez Engineering, LLC
TBPE Firm Registration No. F-18723

FILTER BUILDING DETAILS

DRAWN BY	CHECKED BY
SS	PP
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

FB1-S-501
SHEET NUMBER



NOTES:

1. REFER TO ARCH FOR LOCATION AND SIZE OF NEW EQUIPMENT.
2. REFER TO ARCH FOR LOCATION OF OPENING.
3. MINIMUM CONCRETE COMPRESSIVE STRENGTH SHALL BE 3000 PSI AT 28 DAYS.

1 PLAN - SODIUM HYPOCHLORITE BUILDING - ROOF LEVEL
NO SCALE

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86985
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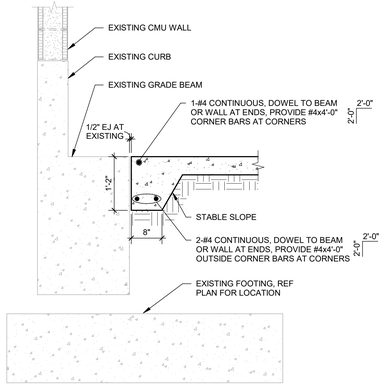
Martinez Engineering, LLC
TBPE Firm Registration No. F-18723

SODIUM HYPOCHLORITE BUILDING FLOOR PLANS AND NOTES

DRAWN BY	CHECKED BY
SS	PP
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

SH-S-101
SHEET NUMBER



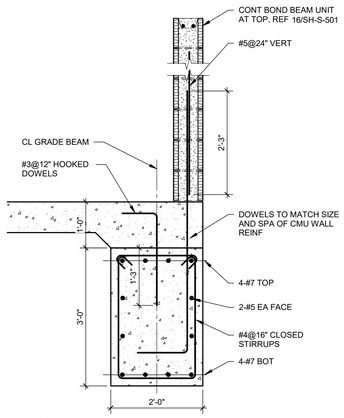
5 TYPICAL EXTERIOR SLAB-ON-GRADE TURNDOWN

NO SCALE

NOTES:
1. CONCRETE PROFILES AND REINFORCING STEEL CONFIGURATIONS ARE SCHEMATIC AND ARE PROVIDED FOR ESTABLISHING TYPICAL CLEAR CONCRETE COVERS ONLY. REFER TO STRUCTURAL PLANS AND DETAILS FOR ALL OTHER INFORMATION.
2. ALL COVERS SHOWN ARE CLEAR FROM THE OUTERMOST SURFACE OF REINFORCING STEEL TO THE CLOSEST OUTER SURFACE OF THE CONCRETE, INCLUDING REVEALS, DRIP GROOVES, OR RUSTICATIONS.
3. WHERE COVERS ARE DIFFERENT AS A FUNCTION OF BAR SIZE, DETAILER SHALL ADJUST LOCATION OF TRANSVERSE REINFORCING STEEL AS REQUIRED SUCH THAT CLEAR COVERS ARE MET FOR BOTH TRANSVERSE AND LONGITUDINAL STEEL.

10 NOTES FOR TYPICAL CLEAR CONCRETE COVER FOR REINFORCING STEEL

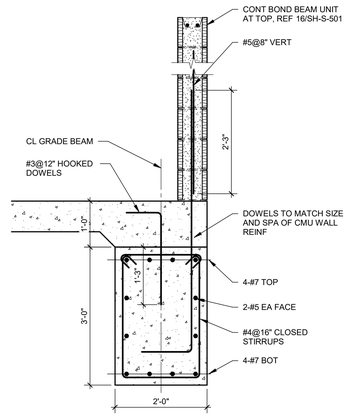
NO SCALE



NOTES:
1. SLAB-ON-GRADE REINF NOT SHOWN FOR CLARITY.
2. REFER TO 5/SH-S-501 FOR SLAB-ON-GRADE DETAILS.

9 TYPICAL GRADE BEAM DETAIL

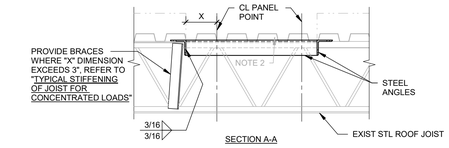
3/4" = 1'-0"



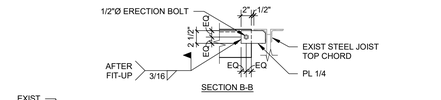
NOTES:
1. SLAB-ON-GRADE REINF NOT SHOWN FOR CLARITY.
2. REFER TO 5/SH-S-501 FOR SLAB-ON-GRADE DETAILS.

8 TYPICAL GRADE BEAM DETAIL

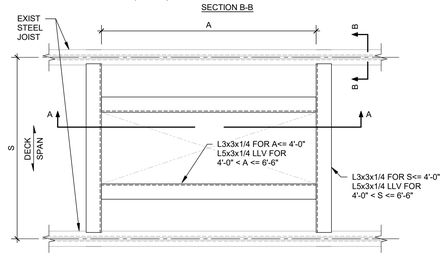
3/4" = 1'-0"



SECTION A-A



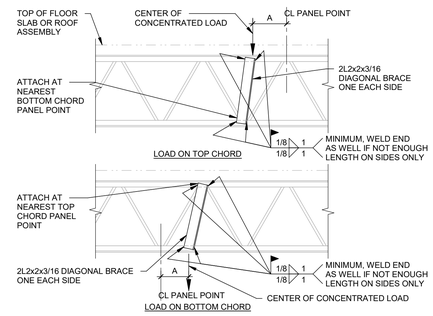
SECTION B-B



NOTES:
1. COORDINATE OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
2. DO NOT CUT OPENINGS UNTIL AFTER SUPPLEMENTAL ANGLE FRAME IS INSTALLED.
3. VERIFY FRAMING WITH ENGINEER WHERE DIMENSIONS EXCEED MAXIMUM DIMENSIONS SHOWN IN THIS DETAIL.

7 NEW FRAMED OPENING IN EXISTING ROOF DECK WITH JOIST CONSTRUCTION

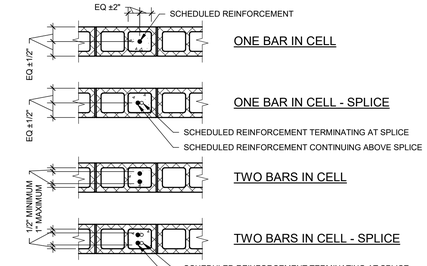
NO SCALE



NOTES:
1. DIAGONAL BRACE IS NOT REQUIRED FOR "A" LESS THAN THREE INCHES.
2. PROVIDE DIAGONAL BRACE AT LOCATION OF CONCENTRATED LOADS SUCH AS PARTITIONS, HEAVY PIPES, MECHANICAL UNITS, HEAVY LIGHTS AND ANY OTHER CONCENTRATED LOADS AND AS NOTED ELSEWHERE IN THE STRUCTURAL DRAWINGS. LOADS MUST BE APPLIED CONCENTRICALLY TO JOIST BOTTOM CHORD.

1 TYPICAL STIFFENING OF EXISTING JOIST FOR CONCENTRATED LOADS

NO SCALE



NOTES:
1. REINFORCEMENT MUST BE PLACED USING REINFORCING BAR POSITIONERS THAT LOCATE THE BAR AS SPECIFIED AND PREVENT MOVEMENT OF THE BAR DURING CONSTRUCTION.
2. SPLICED REINFORCEMENT MUST BE A CONTACT LAP SPLICE WITH SPLICED BARS ALIGNED PARALLEL TO THE WALL AS SHOWN.
3. THE ENGINEER MUST BE NOTIFIED PRIOR TO PLACEMENT OF REINFORCEMENT THAT IS REQUIRED TO BE PLACED OUTSIDE OF THE TOLERANCES OF THIS DETAIL SUCH AS TO AVOID INTERFERENCE WITH OTHER REINFORCEMENT, CONDUITS, OR EMBEDDED ITEMS.

6 TYPICAL CMU VERTICAL BAR PLACEMENT

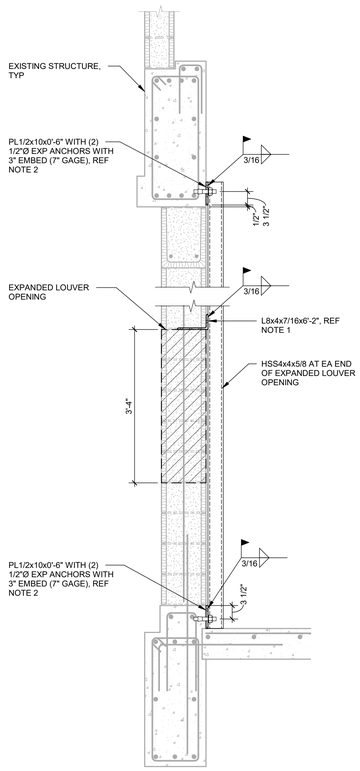
NO SCALE

CMU REINFORCEMENT AND PLACEMENT NOTES:

1. PROVIDE VERTICAL REINFORCEMENT IN CELLS OF CONCRETE MASONRY UNITS (FULLY EMBEDDED IN GROUT) AS SHOWN ON THE PLANS AND OTHER DETAILS. MINIMUM REINFORCEMENT OF INTERIOR AND EXTERIOR MASONRY SHALL BE AS FOLLOWS:
   A. 1-#5 AT MAXIMUM SPACING OF 48"
   B. 1-#5 AT EACH CORNER
   C. 1-#5 AT BOTH SIDES OF OPENINGS UP TO 12 FEET WIDE
   D. 2-#5 OR 1-#7 AT BOTH SIDES OF OPENINGS OVER 12 FEET WIDE
   E. HEAVIER REINFORCEMENT MAY BE REQUIRED BY DETAILS IN THE DRAWINGS.
2. DO NOT LAP VERTICAL REINFORCEMENT AT INTERSECTING BOND BEAMS. REINFORCEMENT SHALL BE CONTINUOUS THROUGH INTERSECTING BOND BEAM.
3. AT MINIMUM, ONE-COURSE HORIZONTAL BOND BEAMS SHALL BE PROVIDED AT EVERY FLOOR LEVEL, ROOF LEVEL AND TOP OF PARAPET. REFER TO 16/SH-S-501 FOR TYPICAL BOND BEAM DETAIL.
4. TERMINATE ALL HORIZONTAL REINFORCEMENT OF DISCONTINUOUS ENDS OF BOND BEAMS INTO VERTICAL GROUTED CELLS WITH A STANDARD HOOK. PROVIDE CORNER BARS SUCH THAT HORIZONTAL REINFORCEMENT IS CONTINUOUS AROUND CORNERS. REFER TO TYPICAL DETAIL 17/SH-S-501 .
5. TERMINATE ALL VERTICAL REINFORCEMENT INTO BOND BEAM AT ROOF LEVEL WITH A STANDARD HOOK. TERMINATE AT HIGHEST BOND BEAM IF MASONRY DOES NOT EXTEND TO ROOF OR GROUTED CELL IS NOT CONTINUOUS TO ROOF. THE HOOK SHALL EXTEND TO THE UPPERMOST HORIZONTAL REINFORCEMENT OF THE BOND BEAM AND SHALL HAVE MINIMUM EMBEDMENT OF 6".
6. PROVIDE HORIZONTAL REINFORCEMENT IN BE JOINTS EVERY OTHER COURSE (MAXIMUM 16" SPACING). REINFORCEMENT SHALL BE LADDER TYPE WITH SIDE RAILS FABRICATED FROM HIGH-STRENGTH, COLD-DRAWN WIRE CONFORMING TO ASTM A82. TRUSSES SHALL BE GALVANIZED AFTER FABRICATION.
7. GROUT LIFT LIMITS:
   A. GROUT POURS SHALL NOT EXCEED 5 FEET PER LIFT WHEN GROUTING THE CELLS OF REINFORCED CMU, UNLESS CLEANOUTS ARE PROVIDED IN THE BOTTOM COURSE OF EACH LIFT.
   B. GROUT POURS SHALL NOT EXCEED 24 FEET WHEN GROUTING THE CELLS OF HOLLOW CMU. WHEN GROUTING THE SPACE BETWEEN MULTI-WYTHE WALLS, THE TOTAL POUR SHALL NOT EXCEED 24 FEET FOR 3" SPACES, 12 FEET FOR 2 1/2" SPACES, AND 5 FEET FOR 2" SPACES.
   C. MECHANICALLY VIBRATE ALL LIFTS IN EXCESS OF 1 FOOT.
   D. ALL GROUT MUST BE PLACED WITHIN 1 1/2 HOURS FROM INTRODUCING WATER INTO THE MIXTURE
   E. GROUT LIFTS SHALL NOT BE STOPPED WITHIN 1 1/2" OF BED JOINT.
8. ALL WALLS LOCATED ADJACENT TO EARTH FILL MUST BE FULLY GROUTED DIRECTLY ADJACENT TO, AND A LEAST 8" ABOVE, ALL SOUL IN CONTACT WITH THE WALL.

20 TYPICAL CMU REINFORCEMENT & PLACEMENT NOTES

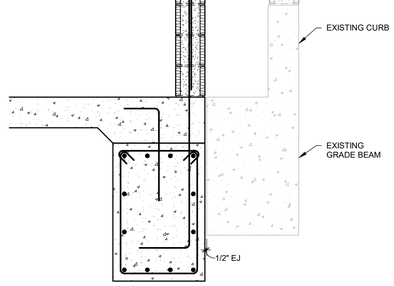
NO SCALE



NOTES:
1. MAKE A CUT IN THE GROUT AND INSERT ANGLE AS SHOWN.
2. DO NOT DAMAGE EXISTING REINFORCEMENT WITH DRILLING OPERATION FOR DOWELS OR ANCHORS.

19 SECTION AT EXPANDED LOUVER OPENING

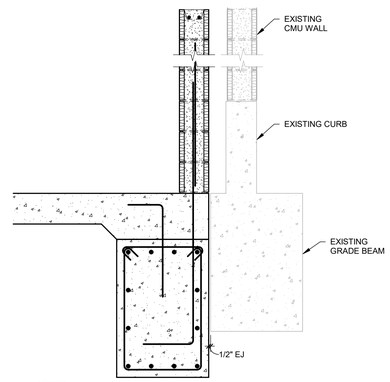
3/4" = 1'-0"



NOTES:
1. REFER TO 8/SH-S-501 FOR GRADE BEAM AND CMU WALL DETAILS.

13 GRADE BEAM DETAIL AT EXISTING STRUCTURE

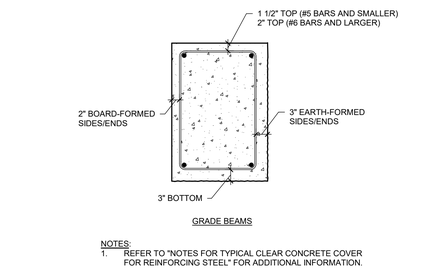
3/4" = 1'-0"



NOTES:
1. REFER TO 8/SH-S-501 FOR GRADE BEAM AND CMU WALL DETAILS.

18 GRADE BEAM DETAIL AT EXISTING STRUCTURE

3/4" = 1'-0"

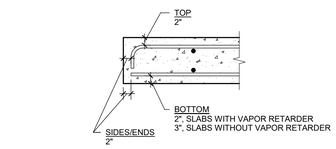


GRADE BEAMS

NOTES:
1. REFER TO "NOTES FOR TYPICAL CLEAR CONCRETE COVER FOR REINFORCING STEEL" FOR ADDITIONAL INFORMATION.

12 TYPICAL CLEAR CONCRETE COVER FOR REINFORCING STEEL IN FOUNDATION ELEMENTS

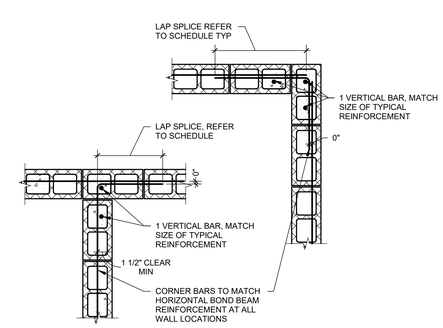
NO SCALE



NOTES:
1. REFER TO "NOTES FOR TYPICAL CLEAR CONCRETE COVER FOR REINFORCING STEEL" FOR ADDITIONAL INFORMATION.

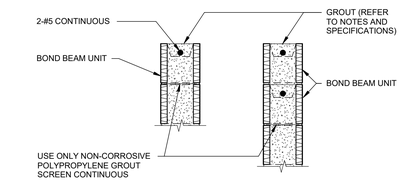
11 TYPICAL CLEAR CONCRETE COVER FOR REINFORCING STEEL IN SLABS-ON-GRADE

NO SCALE



17 TYPICAL BOND BEAM AT WALL INTERSECTION

NO SCALE



NOTES:
1. GROUT CORE AND REINFORCEMENT ARE CONTINUOUS THROUGHOUT BOND BEAM.
2. TERMINATE ALL VERTICAL REINFORCEMENT INTO BOND BEAM USING STANDARD HOOK. EMBED HOOK A MINIMUM OF 6" INTO BOND BEAM. PROVIDE AT LEAST 1 1/2" CLEAR COVER FROM TOP OF BOND BEAM.
3. PROVIDE MATCHING CORNER BARS AT ALL BUILDING CORNERS. LAP WITH REINFORCEMENT SHOWN. REFER TO DETAIL "TYPICAL BOND BEAM AT WALL INTERSECTION".
4. PROVIDE LAP SPLICE PER "TYPICAL CMU VERTICAL BAR TENSION DEVELOPMENT AND LAP SPLICE LENGTHS".

16 TYPICAL MASONRY BOND BEAM

NO SCALE

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PLUMBING SYMBOLS & ABBREVIATIONS

(NOTE: ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS)

FIRE PROTECTION SYMBOLS

- SPRINKLER BRANCH & HEADS
- FIRE DEPT. VALVE WITH CABINET
- FS FS — FLOW SWITCH
- ALARM VALVE
- DRY PIPE VALVE
- UPRIGHT SPRINKLER HEAD
- PENDENT SPRINKLER HEAD
- SIDEWALL SPRINKLER HEAD
- DRY PENDENT SPRINKLER HEAD
- SIDEWALK SIAMESE CONN.
- FLUSH TYPE SIAMESE CONN.
- EXPOSED TYPE SIAMESE CONN.
- INSPECTORS TEST CONN.
- TEST HEADER CONN.
- MOTOR GONG
- POST INDICATOR VALVE
- O.S.&Y. VALVE
- T — TAMPER SWITCH
- FLOOR CONTROL VALVE
- FIRE HOSE VALVE

PIPING DESIGNATIONS

- VENT
- SANITARY SEWER/WASTE
- CONDENSATE
- COLD WATER
- HOT WATER

GENERAL NOTES:

1. SCOPE OF PLUMBING WORK IS TO FURNISHED AND INSTALL ALL FIXTURES, EQUIPMENT, PLUMBING AND PIPING. ALSO IN THE SCOPE ARE MISCELLANEOUS FIXTURES, EQUIPMENT, PLUMBING AND PIPING ON THE SITE.
2. THESE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK AND ARE NOT INTENDED TO INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
3. ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE.
4. ALL TEMPERATURES ARE IN DEGREES F° UNLESS NOTED OTHERWISE.
5. WHEREVER HOT AND COLD WTAER CONTROLS, FAUCETS, VALVES OR STOP VALVES ARE INSTALLED TOGETHER, HOT SHALL BE ON LEFT AND COLD SHALL BE ON RIGHT AS SEEN BY THE USER.
6. SOME SYMBOLS SHOWN MAY NOT BE USED.
7. REFER TO ARCHITECTURAL DRAWINGS FOR MOST ACCURATE WALLS, CEILING ELEMENTS AND PLUMBING FIXTURE LOCATIONS.
8. UTILITY LOCATIONS ARE APPROXIMATE AND ARE BASED ON INFORMATION SUPPLIED BY OTHERS. PHYSICALLY VERIFY LOCATIONS AND ELEVATIONS BEFORE BEGINNING INSTALLATIONS.
9. WASTE PIPING IS GENERALLY UNDER THE FLOOR. ALL OTHER PIPING IS GENERALLY ABOVE THE FLOOR OR CEILING EXCEPT AS INDICATED, OR AS NECESSARY.
10. PIPING SHALL BE ROUTED HIDDEN FROM VIEW. WHERE PIPING CANNOT BE HIDDEN FROM VIEW, OBTAIN ARCHITECT APPROVAL OF ROUTING AND FINISHED APPEARANCE OF PIPING. FACTORY FINISH OF PIPING IS ACCEPTABLE. FACTORY FINISH OF INSULATION JACKET IS ACCEPTABLE. REMOVE NON-FACTORY AND VISABLY OBJECTIONAL MARKS ON FINISHED PIPING AND INSULATION.

PIPING DEVICES

SV	STOP, SHUT-OFF OR GATE VALVE
GV	BY-PASS OR GLOBE VALVE
BV	BALANCING VALVE
CBV	CALIBRATED BALANCE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	HOSE END DRAIN VALVE
CKV	CHECK VALVE, FLOW AS SHOWN
	MOTOR OPERATED VALVE
	SOLENOID VALVE
	PRESSURE REDUCING VALVE
	RELIEF VALVE
	ANGLE VALVE
	VALVE IN RISER
	GAUGE COCK
AV	AIR VENT
ST	STEAM TRAP
STR	STRAINER
	UNION
EJ	EXPANSION JOINT
	PIPE ANCHOR
	FLEXIBLE CONNECTION
	PIPE GUIDE
	FLOW MEASURING STATION
	DIAL THERMOMETER
	PRESSURE GAUGE
	THERMOMETER
	THERMOMETER WELL
P&T	PRESS. & TEMP. TEST PLUG
	SLOPE DN IN DIRECTION SHOWN
	FLOW DIRECTION
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	CAPPED PIPE TERMINATION
	ELBOW DOWN
	ELBOW UP
	CONNECTION BOTTOM OF MAIN
	CONNECTION SIDE OF MAIN
	CONNECTION TOP OF MAIN
	45 DEGREE OFFSET DOWN
	PIPE UP AND DOWN
	PIPE UP AND DOWN
	HOSE BIBB
	FLOOR DRAIN
	DOUBLE CHECK BACKFLOW PREVENTER
	REDUCED PRESS. PRINCIPLE BACKFLOW PREVENTER

GENERAL SYMBOLS

- 101 — ROOM NUMBER
- K — KITCHEN EQUIPMENT NUMBER
- P.3-1A — DRAWING SECTION DESIGNATION
- P.4-1A — DETAIL DESIGNATION
  NOTE: DRAWING CATEGORY IS NOT INDICATED IF DETAIL OR SECTION DESIGNATION REFERS TO SAME CATEGORY.
- P/1 — PLUMBING RISER
- 2 — KEYED NOTES
- 2 — REVISIONS
- CONNECTION TO EXISTING
- P — SCHEMATIC FAN OR PUMP
- S — TEMPERATURE SENSOR
- H — HUMIDISTAT
- FUTURE TENANT CONNECTION

EQUIPMENT DESIGNATIONS

AC/1 — – EQUIPMENT TYPE FROM LIST / – SCHEDULED UNIT NUMBER

AC	AIR COMPRESSOR
ACU	AIR CONDITIONING UNIT
AF	AIR FILTER
AHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
ATU	AIR TERMINAL UNIT
B	BOILER
BFP	BOILER FEEDWATER PUMP
BP	BOOSTER PUMP (WATER PRESSURE)
BR	BASEBOARD RADIATION
BS	BLOWDOWN SEPARATOR
C	CHILLER
CC	COOLING COIL
CRP	CONDENSATE RECEIVER PUMP UNIT
CRU	COMPUTER ROOM UNIT
CT	COOLING TOWER
CTH	COOLING TOWER HEATER
CU	CONDENSING UNIT (AIR COOLED)
DC	DRY COOLER
EC	EVAPORATIVE COOLER
EHC	ELECTRIC HEATING COIL
ET	EXPANSION TANK
EWH	ELECTRIC WATER HEATER
F	FAN
FCU	FAN COIL UNIT
FCV	FLOW CONTROL VALVE (AUTOMATIC)
FD	FIRE DAMPER
FP	FIRE PUMP
FTU	FAN TERMINAL UNIT
GRV	GRAVITY ROOF VENTILATOR
H	HUMIDIFIER
HC	HEATING COIL
HPA	HEAT PUMP, AIR SOURCE
HPW	HEAT PUMP, WATER SOURCE
HX	HEAT EXCHANGER
JP	JOCKEY PUMP
MD	MOTORIZED DAMPER
P	PUMP
PP	PLUMBING PUMP
PRV	PRESSURE REDUCING VALVE
PV	POWER VENTILATOR
RC	REFRIGERANT COMPRESSOR
RH	RADIANT HEATING PANEL
RV	RELIEF VALVE
RTU	ROOF TOP UNIT
SA	SOUND ATTENUATOR
SCD	SMOKE CONTROL DAMPER
SE	SEWAGE EJECTOR
SP	SUMP PUMP
ST	STEAM TRAP
TC	TRASH COMPACTOR
UH	UNIT HEATER
VRP	VACUUM RETURN PUMP UNIT
WH	WATER HEATER

ABBREVIATION DESCRIPTION

A	AMPERES
AC	ABOVE CEILING
A/C	AIR CONDITIONING
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
AUTO	AUTOMATIC
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
C	CONDENSATE
CAP	CAPACITY
CAT	CATEGORY
CCW	COUNTER CLOCKWISE
CD	CEILING DIFFUSER
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CLG	CEILING
CO	CLEAN OUT
CONN	CONNECTION
CONT	CONTINUE OR CONTINUATION
CONTR	CONTRACTOR
CU	COPPER
CV	CONTROL VALVE
CW	COLD WATER
CW	CLOCKWISE
dB	DECIBELS
DB	DRY BULB
DEG	DEGREES (FAHRENHEIT)
DEPT	DEPARTMENT
DF	DRINKING FOUNTAIN
DIA	DIAMETER (ø)
DIR	DIRECTION
DISC	DISCONNECT
DIV	DIVISION
DN	DOWN
DPR	DAMPER
DRWG	DRAWING
DS	DOWNSPOUT
DT	DUST TIGHT
EDR	EQUIVALENT DIRECT RADIATION
EER	ENERGY EFFICIENCY RATIO
ELEC	ELECTRIC OR ELECTRICAL
EMCS	ENERGY MANAGE. CONTROL SYS.
EMER	EMERGENCY
EP	EXPLOSION PROOF
ESP	EXTERNAL STATIC PRESSURE
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
(E)	EXISTING
FC	FLEXIBLE CONNECTION
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDC	FIRE DEPT CONNECTION
FDR	FEEDER
FDH	FIRE DAMPER IN HORIZONTAL
FDV	FIRE DAMPER IN VERTICAL
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHS	FIRE HOSE STATION
FHV	FIRE HOSE VALVE
FL	FLOOR
FLA	FULL LOAD AMPS
FLE	FLOW LINE ELEVATION
FLEX	FLEXIBLE
FP	FIRE PROTECTION
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FS	FUSIBLE SWITCH
FT	FEET (')
FVC	FIRE VALVE CABINET
GA	GAUGE
GALV	GALVANIZED
GCO	GRADE CLEAN OUT
GEN	GENERATOR
GL	GREASE LINE
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GRD	GROUND
HB	HOSE BIBB
HD	HUB DRAIN
HOR	HORIZONTAL
HP	HORSEPOWER
HR	HOUR
HT	HEIGHT
HTG HVAC	HEATING, VENTILATING, & AIR CONDITIONING
HW	HOT WATER
HZ	HERTZ – FREQUENCY IN CYCLES PER SECOND
IE	INVERT ELEVATION
INC	INCLUDE OR INCLUDED
IN	INCHES (")
IW	INDIRECT WASTE
KW	KILOWATTS
LAV	LAVATORY
LB	POUNDS
LTG	LIGHTING
LWT	LEAVING WATER TEMPERATURE
MB	MOP BASIN
MBH	THOUSAND BTU PER HOUR
MCC	MOTOR CONTROL CENTER
MECH.	MECHANICAL
MFR.	MANUFACTURER
MH	MANHOLE
MIN.	MINUTES
MTD	MOUNTED
MTR	MOTOR
NC	NORMALLY CLOSED
(N)	NEW
NF	NON-FUSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OD	OVERFLOW DRAIN
OS&Y	OUTSIDE SCREW AND YOKE
PD	PRESSURE DROP
PH	PHASE
PIV	POST INDICATOR VALVE
PLBG	PLUMBING
PNL	PANEL
PPH	POUNDS PER HOUR
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	PRESSURE IN PSI GAUGE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIANT,RADIATOR,OR RADIATION
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REC	RECESSED
RECP	RECEPTACLE
REF	REFERENCE, CALLED OUT ELSEWHERE
REQD	REQUIRED
RL	ROOF DRAIN LEADER
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RT	RAIN TIGHT
SS	SANITARY
SCFM	CFM OF DRY AIR AT STANDARD
SEC	SECONDS
SF	SQUARE FEET
SH	SHOWER
SHT	SHEET
SK	SINK
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
SS	SANITARY SEWER
STL	STEEL
SW	SWITCH
TD	TRENCH DRAIN
TEL	TELEPHONE
TEMP	TEMPORARY
TP	TOTAL PRESSURE
T&PRV	TEMPERATURE & PRESSURE RELIEF VALVE
TYP	TYPICAL
UF	UNDERFLOOR
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
V	VENT
V	VOLTS
VB	VACUUM BREAKER
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VP	VELOCITY PRESSURE
VTR	VENT THROUGH ROOF
W	WATTS
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WF	WASH FOUNTAIN
WG	INCH OF WATER PRESSURE,GAUGE
WH	WALL HYDRANT
WM	WATER METER
WMA	WATER METER ALARM
WP	WEATHERPROOF
WPD	WATER PRESSURE DROP
WS	WET STACK
WTR	WATER
YD	YARD DRAIN

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0	ISSUE FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

STATE OF TEXAS — JOSHUA BAUMGARTNER — 119197 — LICENSED PROFESSIONAL ENGINEER

3-19-21

CNG ENGINEERING, PLLC.
REG. NO. F-7964

PLUMBING SYMBOLS AND ABBREVIATIONS

DRAWN BY: ML	CHECKED BY: JB
PROJECT NUMBER: 20-0017	PROJECT ABBREVIATION: COA HWTP
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P-000

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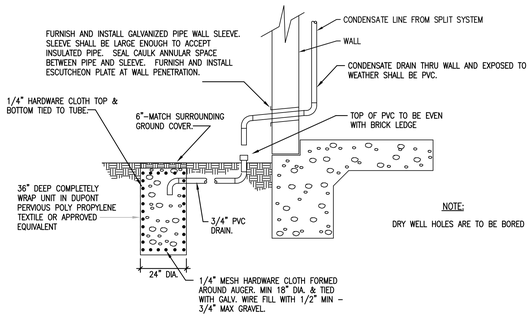
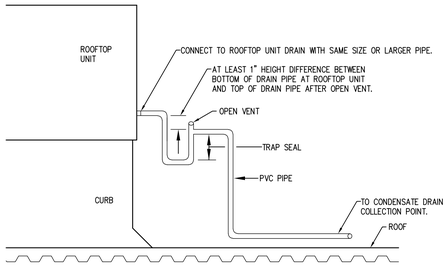


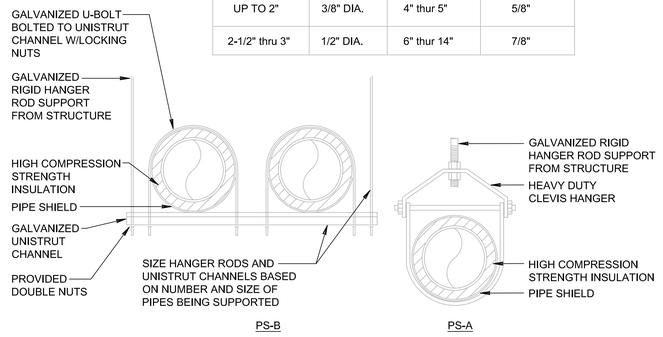
1 **DRY WELL DETAIL**
NOT TO SCALE



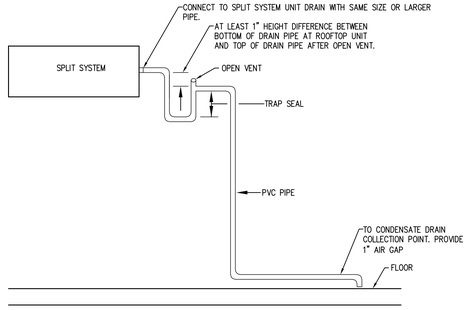
2 **CONDENSATE DRAIN PIPING AT ROOFTOP UNIT**
NOT TO SCALE

PIPE SIZE

HANGER ROD SCHEDULE (CLEVIS)			
PIPE SIZE	ROD SIZE	PIPE SIZE	ROD SIZE
UP TO 2"	3/8" DIA.	4" thur 5"	5/8"
2-1/2" thru 3"	1/2" DIA.	6" thur 14"	7/8"



3 **TYPICAL PIPE SUPPORT DETAIL**
NOT TO SCALE



4 **CONDENSATE DRAIN PIPING**
NOT TO SCALE

PIPE MATERIAL LIST

CONDENSATE PIPING

ABOVE SLAB ALL PIPES SHALL BE SCHEDULE 40 PVC PIPE AND FITTINGS.

PROVIDE 1" INSULATION ON CONDENSATE PIPE INSIDE THE BUILDING.

COMPRESSED AIR PIPING

ABOVE SLAB INSIDE THE BUILDING SHALL BE SEAMLESS ASTM B 88 TYPE K HARD COPPER WATER TUBE WITH WROUGHT COPPER FITTINGS, ANSI B16.22. SOLDER MATERIAL SHALL BE 95.5% LEAD FREE, ASTM B 32. THE USE OF DRILLED-T CONNECTIONS IS NOT PERMITTED.

NOTES:

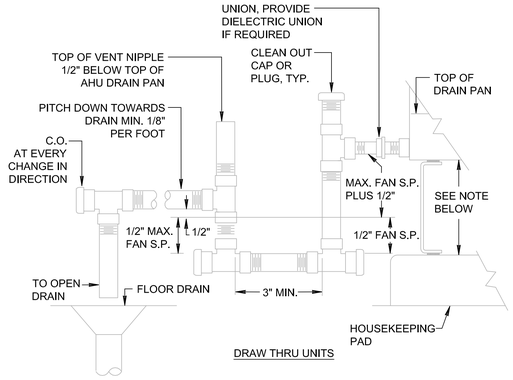
1. MAX. S.P. REFERS TO THE MAXIMUM STATIC PRESSURE PRODUCED BY THE FAN AS INDICATED IN THE AHU SCHEDULE.

2. HEIGHT OF THE AHU BASE TO BE NO LESS THAN THE CALCULATED HEIGHT OF THE P-TRAP PLUS ONE INCH FOR CLEANING, PLUS AN ADDITIONAL 1/8" PER FOOT AS REQUIRED FOR ROUTING THE CONDENSATE TO THE FLOOR DRAIN.

3. INSULATE THE CONDENSATE PIPING; RE: SPECIFICATIONS.

4. CONDENSATE DRAIN SIZING CHART; PROVIDE DRAIN PIPING AS SHOWN BELOW OR SAME SIZE OF DRAIN PORT, WHICHEVER IS GREATER.

TOTAL COOLING COIL BTU	DRAIN SIZE (MIN.)
0 - 24,000	3/4"
24,001 - 60,000	1"
60,001 - 360,000	1-1/4"
360,001 - 600,000	1-1/2"
600,001 - 2,040,000	2"
2,040,001 - 3,600,000	3"



4 **CONDENSATE DRAIN DETAIL**
NOT TO SCALE

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUE FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

CNG ENGINEERING, PLLC.
REG. NO. F-7964

PLUMBING DETAILS

DRAWN BY	CHECKED BY
ML	JB
PROJECT NUMBER	PROJECT ABBREVIATION
20-0017	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

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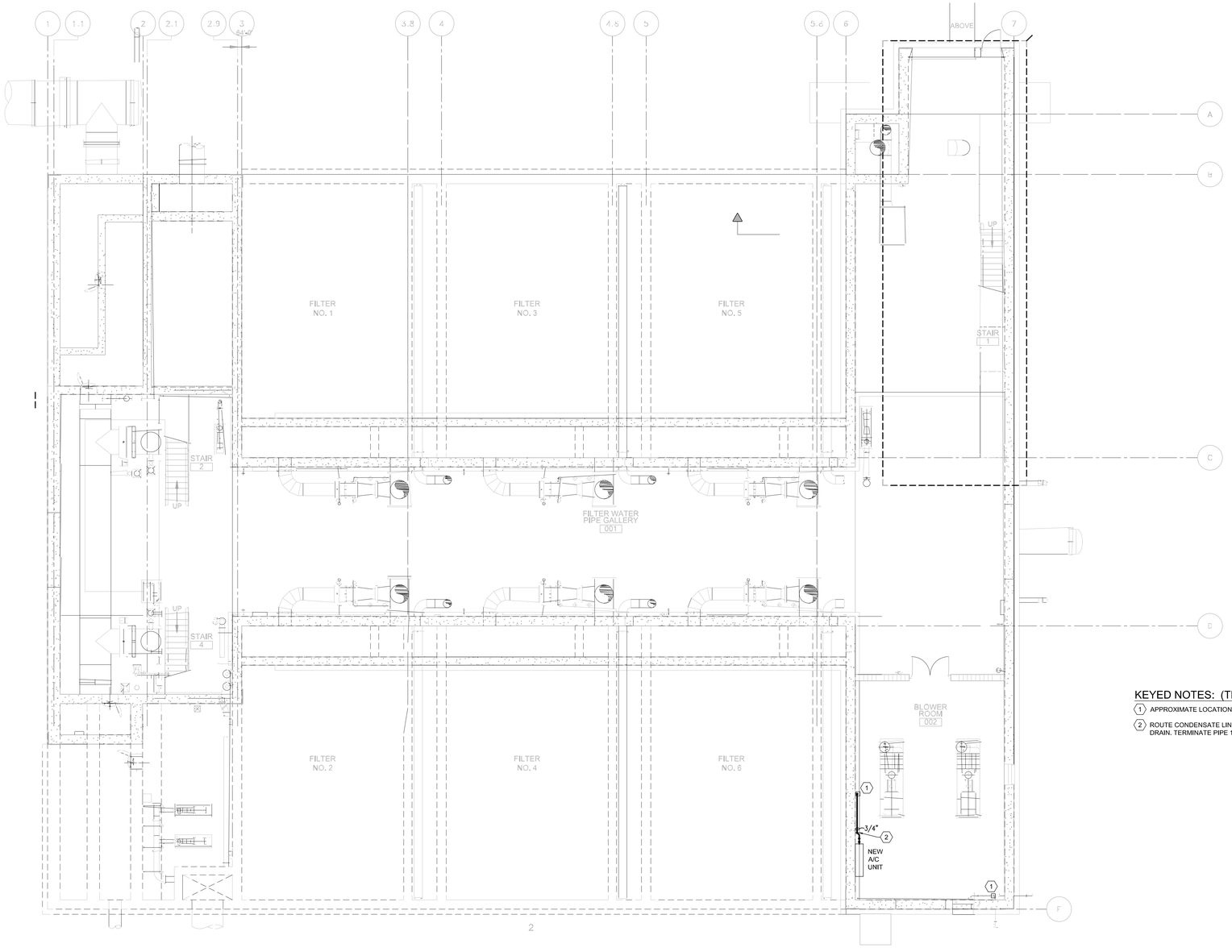

1 FILTER BUILDING - PLUMBING FLOOR PLAN
1/8" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

1. APPROXIMATE LOCATION OF EXISTING FLOOR DRAIN.
2. ROUTE CONDENSATE LINE DOWN AND BEHIND EQUIPMENT TO FLOOR DRAIN. TERMINATE PIPE 1" A.F.F.

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NEW CONSTRUCTION FILTER BUILDING FLOOR PLAN

DRAWN BY	CHECKED BY
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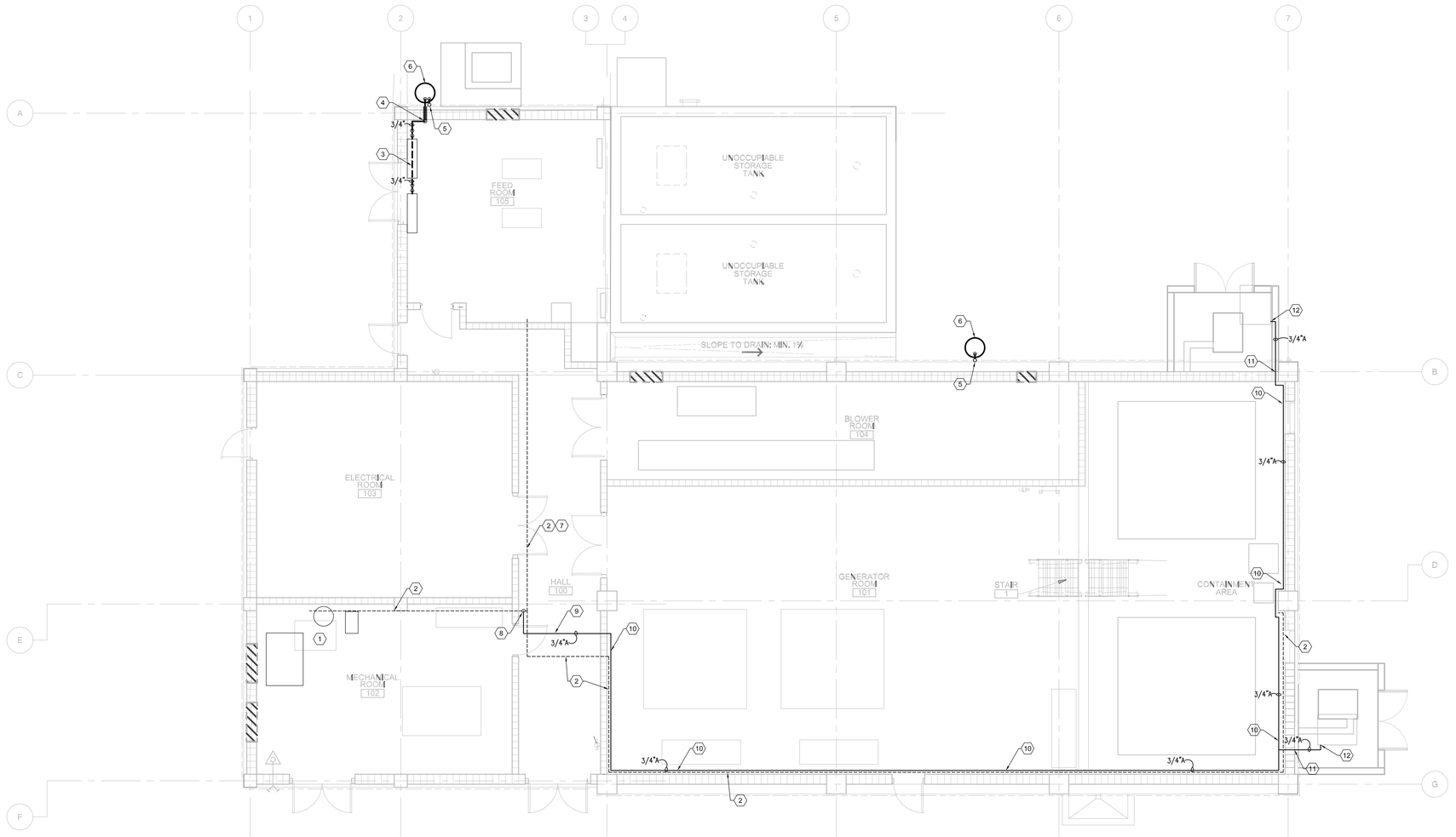

KEYED NOTES: (THIS SHEET ONLY)

1. APPROXIMATE LOCATION OF EXISTING AIR COMPRESSOR, AIR TANK AND AIR DRYER.
2. APPROXIMATE LOCATION OF EXISTING COMPRESSED AIR PIPING.
3. ROUTE CONDENSATE PIPE BELOW.
4. ROUTE CONDENSATE PIPE BEHIND THE PIPES AND DOWN THE WALL AND PENETRATE WALL TO DRY WELL. REFER TO DRY WELL DETAIL. PROVIDE WALL SLEEVE AND SEAL AIRTIGHT.
5. CONDENSATE PIPE DOWN THE WALL FROM ROOF TO DRY WELL. REFER TO DRY WELL DETAIL.
6. DRY WELL REFER TO DETAIL.
7. PROVIDE ADDITIONAL PIPE SUPPORT TO EXISTING COMPRESSED AIR. REFER TO DETAIL.
8. CONNECT NEW COMPRESSED AIR PIPE TO EXISTING COMPRESSED AIR PIPE.
9. PROVIDE PIPE SUPPORT. REFER TO DETAIL.
10. ROUTE COMPRESSED AIR ALONG THE WALL AND PROVIDE WALL SUPPORT. COORDINATE ROUTING WITH OTHER EXISTING PIPES ON THE WALL.
11. PENETRATE WALL AND PROVIDE WALL SLEEVE. SEAL PENETRATION AIRTIGHT.
12. CONNECT COMPRESSED AIR PIPE TO EQUIPMENT. COORDINATE CONNECTION AS PER MANUFACTURER RECOMMENDATION.

1 SODIUM HYPOCHLORITE - PLUMBING FLOOR PLAN

3/16" = 1'-0"

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NEW CONSTRUCTION SODIUM HYPOCHLORITE FLOOR PLAN

DRAWN BY: ML	CHECKED BY: JB
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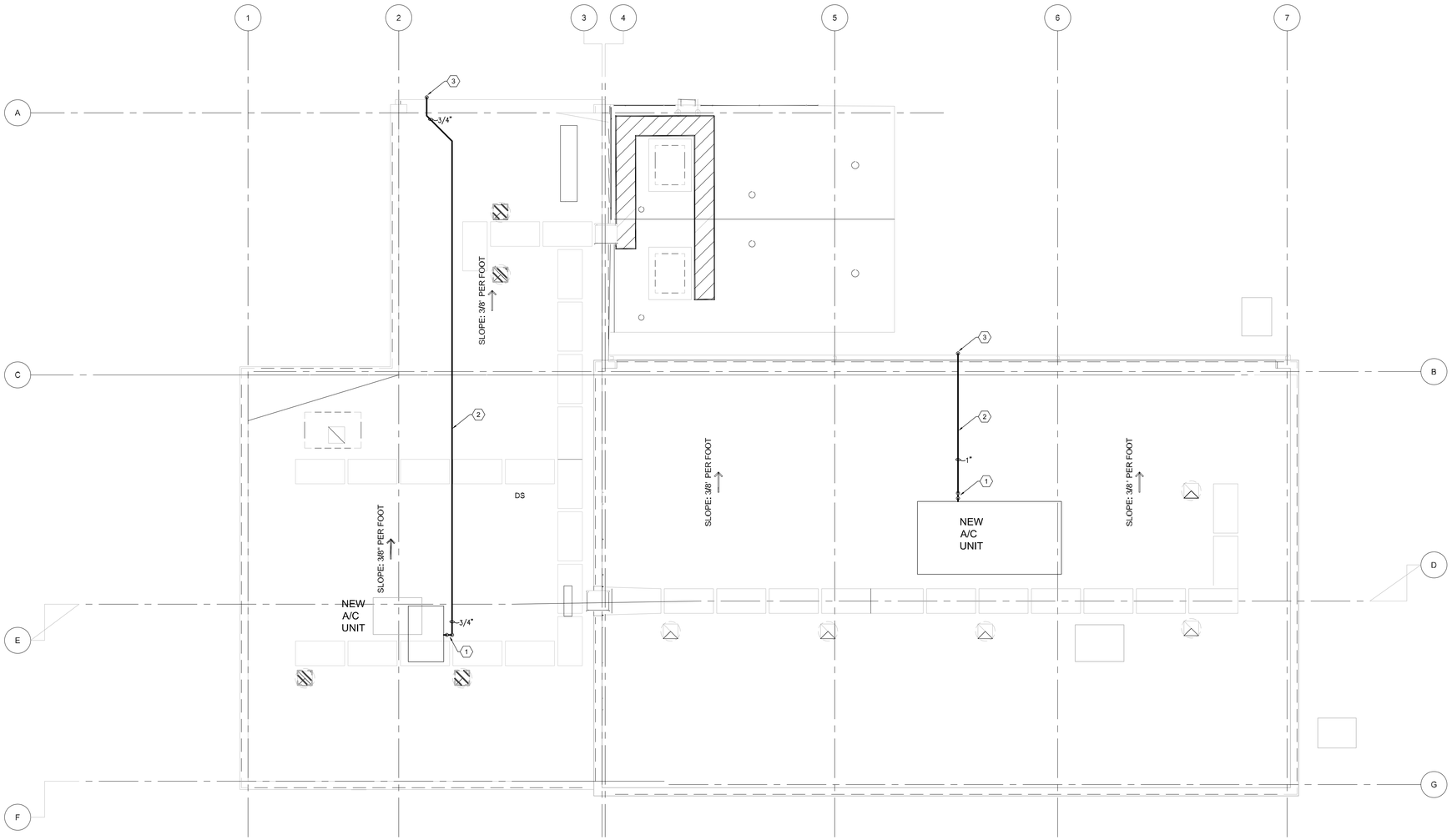

KEYED NOTES: (THIS SHEET ONLY)

1. CONDENSATE CONNECTION AND P-TRAP. REFER TO DETAIL.
2. ROUTE CONDENSATE ON ROOF. PROVIDE ROOF PIPE SUPPORT. REFER TO DETAIL.
3. CONDENSATE PIPE DOWN TO DRY WELL.

1 SODIUM HYPOCHLORITE - PLUMBING FLOOR PLAN

3/16" = 1'-0"

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NEW CONSTRUCTION SODIUM HYPOCHLORITE ROOF PLAN

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SH-P-102

SHEET NUMBER

DRAWING NUMBER CONVENTION

CB-M-101

BUILDING	DISCIPLINE	DRAWING TYPE	SHT No
CB – CHEMICAL BUILDING	A – ARCHITECTURAL	0 GENERAL	1
FB1 – FILTER BUILDING	M – MECHANICAL	1 – PLANS	2
SH – SH BUILDING	P – PLUMBING	2 – ELEVATIONS	ETC,
	S – STRUCTURAL	3 – SECTION OR ELEVATION	
		4 – ENLARGED PLANS	
		5 – DETAILS	
		6 – SCHEDULES AND DIAGRAMS	
		7 – CONTROLS	
		8 – USER DEFINED	

GRAPHIC SYMBOLS

- SECTION NO.
- DIRECTION OF CUTTING PLANE
- SHEET NO. OF THE PACKAGE ON WHICH SECTION IS DRAWN

X / XX.XX

EXAMPLE: ASSUME A SECTION IS CUT ON DWG. P2.01 WITH A TAG OF 1/P6.01. THE SECTION No. 1 IS ON DRAWING No. P6.01.

- SECTION OR DETAIL NO.
- 1 DRAWING TITLE — DRAWING TITLE
- SCALE: 1/4" = 1'–0" — SCALE OF SECTION OR DETAIL
- AREA OF DETAIL ENLARGED
- DETAIL NO. (X / XXX)
- SHEET NO. ON WHICH ENLARGED DETAIL IS DRAWN

MULTI–LINE DESIGNATION KEY

HORIZONTAL RUN ON PLAN READ TOP TO BOTTOM

2" HWS
2" HWR
4" CWR
4" CWS
BOP 12'–6" AFF LOWER PIPE RACK

4" HA (F) *
2" IA
2" IW
2" DIS
2" DIR
BOP 13'–6" AFF UPPER PIPE RACK

HWS, HWR, CWR, CWS, HA(F) *, IA, IW, DIS, DIR

VERTICAL RUN ON PLAN READ LEFT TO RIGHT

DIR, DIS, IW, IA, HA (F) *

4" CWS
4" CWR
2" HWR
2" HWS
BOP 12'–6" AFF LOWER PIPE RACK

CWS, CWR, HWR, HWS

2" DIR
2" DIS
2" IW
2" IA
4" HA (F) *
BOP 13'–6" AFF UPPER PIPE RACK

* – (F) INDICATES FUTURE PIPING ON RACK

PIPING DESIGNATION

EXAMPLE:

2" CHWS

2" CHWS
- SYSTEM SERVICE ABBREVIATION
- NOMINAL PIPE SIZE (IN INCHES)

MISCELLANEOUS SYMBOLS

Symbol	Description
XXX–1	EQUIPMENT DESIGNATIONS
	PIPE SECTION
	PIPE BREAK
	FLOW ARROW
	STANDARD BREAK / RECTANGULAR DUCT BREAK
	SAW CUT SLAB AREA FOR INSTALLATION OF NEW ITEMS
	KEYED NOTE
	POINT OF DISCONNECTION
	POINT OF CONNECTION (NEW TO EXISTING)
	NEW ITEMS (PIPING/DUCTWORK/EQUIPMENT)
	EXISTING ITEMS TO REMAIN
	EXISTING ITEMS TO BE DEMOLISHED/RELOCATED
	LIMIT OF EXISTING ITEMS TO BE REMOVED
(N)	NOTATION – NEW ITEM (NOTATION SHOWN AS NECESSARY FOR CLARIFICATION)
(E)	NOTATION – EXISTING ITEM TO REMAIN (NOTATION SHOWN AS NECESSARY FOR CLARIFICATION)
(R)	NOTATION – EXISTING ITEM TO BE RELOCATED (NOTATION SHOWN AS NECESSARY FOR CLARIFICATION)
(D)	NOTATION – EXISTING ITEM TO BE DEMOLISHED (NOTATION SHOWN AS NECESSARY FOR CLARIFICATION)

PIPE AND FITTING SYMBOLS

DOUBLE LINE / SINGLE LINE

- PIPE
- WELDED JOINT
- SCREWED JOINT (OR GENERIC SINGLE LINE)
- FLANGED JOINT
- UNION
- GROOVED END JOINT
- GENERIC FLEXIBLE COUPLING (REFER TO SPECIFICATIONS)
- GROOVED END ADAPTER FLANGE
- FLANGED COUPLING ADAPTER
- STUB END OR FLANGE ADAPTER W/ FLANGE RING
- ELBOW, 45 DEGREE (LONG RADIUS UON)
- ELBOW, 90 DEGREE (LONG RADIUS UON)
- ELBOW, 90 DEGREE – CHANGE IN DIRECTION TOWARD VIEWER
- ELBOW, 90 DEGREE – CHANGE IN DIRECTION AWAY FROM VIEWER
- TEE
- TEE, BRANCH TOWARD VIEWER
- TEE, BRANCH AWAY FROM VIEWER
- LATERAL
- REDUCER – CONCENTRIC
- REDUCER – ECCENTRIC
- CAP
- ANCHOR
- PG — PIPE ALIGNMENT GUIDE
- BLIND FLANGE
- C.O. — CLEAN OUT
- TEST PORT
- PIPING WITH INSULATION (WHEN SHOWN FOR CLARITY)
- E E — INSULATED PIPE WITH HEAT TRACING TYPE AS NOTED (E=ELECTRIC, S=STEAM, HW=HOT WATER)
- SECONDARY CONTAINMENT (SLEEVED) PIPING (WHEN SHOWN FOR CLARITY)
- STRAINER – "Y" TYPE WITH BLOW DOWN
- STRAINER – BASKET TYPE
- AIR SEPARATOR
- WATER METER
- THERMOWELL WITH THERMOMETER
- PRESSURE GAUGE W/GAUGE COCK (SERVICES EXCEPT STEAM)
- PRESSURE GAUGE W/GAUGE COCK AND SIPHON LOOP (STEAM / CONDENSATE SERVICE)
- VENTURI FLOW METER
- FLOW ORIFICE PLATE
- OFFSET (45° ELBOWS UON)
- F&T — STEAM TRAP, TYPE AS NOTED
  - IB = INVERTED BUCKET
  - F&T = FLOAT & THERMOSTATIC
  - TH = THERMODYNAMIC
  - BP = BALANCED PRESSURE
- GENERIC PUMP

NOTES:
1. ONLY WELDED FITTINGS ARE SHOWN FOR DOUBLE LINE PIPING. FITTINGS WITH OTHER END CONDITIONS ARE SIMILAR.

VALVE SYMBOLS

DOUBLE LINE / SINGLE LINE

- GATE VALVE, BLOCK VALVE
- CHECK VALVE
- BUTTERFLY VALVE
- DIAPHRAGM VALVE
- BALL VALVE
- NEEDLE VALVE
- COMBINATION BALANCING & SHUT–OFF VALVE
- GAS COCK OR PLUG VALVE
- BACKWATER VALVE
- GAS PRESSURE REGULATOR
- PRESSURE REDUCING VALVE
- THREEWAY BALL VALVE
- GLOBE VALVE
- CIRCUIT SETTER
- PRESSURE RELIEF
- AUTOMATIC AIR VENT
- MANUAL AIR VENT
- PNEUMATIC ACTUATED VALVE
- MANUAL AIR VALVE
- ACTUATED BUTTERFLY VALVE
- HANDWHEELS

NOTE:
1. VALVE DESIGNATION AND HANDWHEELS ARE SHOWN ON VALVE SIZES 4 INCH NOMINAL AND LARGER, MAY OR MAY NOT BE DESCRIBED ON VALVE SIZES SMALLER THAN 4 INCH NOMINAL.

AUTOMATIC VALVES

SEE AUTOMATIC ACTUATOR SYMBOLS (TYP)

- 2–WAY VALVE, GLOBE STYLE
- 3–WAY VALVE, GLOBE STYLE
- 2–WAY VALVE, GATE STYLE
- 3–WAY VALVE, BUTTERFLY STYLE
- 2–WAY VALVE, BUTTERFLY STYLE
- 2–WAY VALVE, BALL STYLE

AUTOMATIC ACTUATOR SYMBOLS

- (S) ELECTRIC ACTUATOR, SOLENOID
- PNEUMATIC ACTUATOR, DIAPHRAGM
- (M) ELECTRIC ACTUATOR, MOTOR
- [M] PNEUMATIC ACTUATOR, MOTOR

CONTROL LEGEND

Symbol	Description
CS	CURRENT SENSOR
H	HUMIDITY SENSOR
HS	HUMIDITY SWITCH
TS	TEMPERATURE SENSOR
TS	TEMPERATURE SWITCH IN DUCT OR PIPE
M	MOTOR OPERATED
FS	FLOW SENSOR
FS	FLOW SWITCH
	MOTOR STARTER
AO	ANALOG OUTPUT
AI	ANALOG INPUT
DO	DIGITAL OUTPUT
DI	DIGITAL INPUT
T	PNEUMATIC SPACE THERMOSTAT
DP	DIFFERENTIAL PRESSURE SWITCH
DP	DIFFERENTIAL PRESSURE SENSOR
T	WALL THERMOSTAT / WALL TEMPERATURE SENSOR
G	PRESSURE GAUGE
P	STATIC PRESSURE SENSOR
SD	SMOKE DETECTOR (DIV. 16)
SP	STATIC PRESSURE CONTROLLER
VFD–C	VARIABLE FREQUENCY DRIVE (CONTROLLER)
VFD–D	VARIABLE FREQUENCY DRIVE (DRIVE)
HWA	HIGH WATER ALARM
MOBD	MANUAL OPPOSED BLADE DAMPER
F	FREEZE THERMOSTAT – LOW LIMIT
H	HUMIDISTAT or HUMIDITY CONTROL
CO2	CARBON DIOXIDE SENSOR
PA	PNEUMATIC ACTUATOR
S	SOLENOID STARTER
R	RELAY
AFM	AIR FLOW MONITOR
DCP	DEDICATED CONTROL PANEL
NCP	NETWORK CONTROL PANEL

HVAC SYMBOLS

DOUBLE LINE / SINGLE LINE

- W/D — DUCT DIMENSIONS ARE IN INCHES, INSIDE CLEAR, FIRST DIM. IS SIDE SHOWN
- W/D — DUCT WITH ACOUSTIC LINING. INSIDE CLEAR DIMENSION, INCLUDING LINING
- Dø — ROUND DUCT. D = DIAMETER
- W/Dø — OVAL DUCT
- or — FLEX DUCT
- (DOWN) — ROUND DUCT SLOPED
- DIRECTION OF AIRFLOW
- R — INCLINED RISE(R) OR DROP(D) RELATIVE TO DIRECTION OF AIR FLOW
- RETURN OR NEGATIVE PRESSURE DUCT SECTION, SECTION TOWARD VIEWER
- SUPPLY OR POSITIVE PRESSURE DUCT SECTION, SECTION TOWARD VIEWER
- POSITIVE OR NEGATIVE EXHAUST DUCT SECTION, SECTION TOWARD VIEWER
- RETURN OR NEGATIVE PRESSURE DUCT
- SUPPLY OR POSITIVE PRESSURE DUCT
- POSITIVE OR NEGATIVE EXHAUST DUCT
- RETURN OR NEGATIVE PRESSURE DUCT, SECTION AWAY FROM VIEWER
- SUPPLY OR POSITIVE PRESSURE DUCT, SECTION AWAY FROM VIEWER
- POSITIVE OR NEGATIVE EXHAUST DUCT, SECTION AWAY FROM VIEWER
- FLEXIBLE CONNECTION
- MANUAL VOLUME DAMPER (SINGLE BLADE OR PARALLEL BLADE UON)
- OBD — OPPOSED BLADE DAMPER (OBD)
- M — MOTORIZED VOLUME DAMPER
- FD — FIRE DAMPER (FD), SMOKE DAMPER (SD), FIRE/SMOKE DAMPER (FSD)
  - HORIZONTAL POSITION
  - VERTICAL POSITION
- 90° ELBOW WITH TURNING VANES
- 2–WAY T–SPLIT
- W, R — 90° RADIUS ELBOW R = 1.5W
- BRANCH DUCT TAP
- DUCT TRANSITION, ASYMMETRIC (RECT x RECT)
- DUCT TRANSITION, SYMMETRIC (RECT x RECT)
- DUCT TRANSITION (RECT x ROUND)
- SPIN–IN FITTING WITH DAMPER, FITTING TYPE AS SPECIFIED
- S CFM X / 24x24
  - SUPPLY (S), RETURN (R) OR EXHAUST (E) SIDEWALL REGISTER
  - INDICATE CFM
  - MARK SEE SCHEDULE
  - REGISTER SIZE (IN INCHES)
- INACTIVE DUCT SECTION. SHADED PORTION INDICATES CONNECTION BETWEEN ACTIVE DUCT SEGMENTS
- R CFM X — CEILING RETURN DEVICE INDICATE CFM
- S CFM X — SUPPLY DIFFUSER INDICATE CFM
- E CFM X — CEILING EXHAUST DEVICE INDICATE CFM
- S CFM X — ROUND SUPPLY DIFFUSER INDICATE CFM
- SLOT DIFFUSER, INDICATE CFM ARROWS INDICATE THROW
- HUMIDIFIER
- DG — DOOR GRILLE
- UCD 1" — UNDERCUT DOOR (UNDERCUT HEIGHT SHOWN)
- LOUVER
- SUPPLY AIRFLOW
- RETURN OR EXHAUST AIRFLOW

ABBREVIATIONS

A	AIR LINE
AAV	AUTOMATIC AIR VENT
ABAN	ABANDON
ABS	ABSOLUTE
ABV	ABOVE
AC	ALTERNATING CURRENT
ACCU	AIR COOLED CONDENSING UNIT
ACHKV	AUTOMATIC CHECK VALVE
AP	ACCESS PANEL
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR, AREA DRAIN
ADP	APPARATUS DEW POINT
AF	AIR FILTER
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AHP	AIR HORSEPOWER
ALT	ALTITUDE
AMB	AMBIENT
AMP	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APD	AIR PRESSURE DROP
APPROX	APPROXIMATE
APR	AIR PRESSURE RETURN
AS	AIR SEPARATOR
ASC	ABOVE SUSPENDED CEILING
ASU	AIR SUPPLY VENT
ASV	ANGLE STOP VALVE
ATC	AUTOMATIC TEMPERATURE CONTROL
ATM	ATMOSPHERE
ATV	ATMOSPHERIC VENT
AUV	AUTOMATIC VENT
AV	AIR VENT
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
B&S	BELL & SPIGOT
B/B	BACK TO BACK
BAL	BALANCE
BARO PR	BAROMETRIC PRESSURE
BBD	BOILER BLOWDOWN
BBR	BASE BOARD RADIATOR
BF	BOTH FACES
BFV	BUTTERFLY VALVE
BFBP	BOILER FEED BOOSTER PUMP
BFW	BOILER FEED WATER
BLDG	BUILDING
BHP	BRAKE HORSEPOWER, BOILER HORSEPOWER
BLR	BOILER
BLW	BELOW
BLWDN	BLOW DOWN LINE
BO	BLOWOFF
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STEEL
BS	BOTH SIDES
BSP	BLACK STEEL PIPE
BSTR	BOOSTER
BSS	BOTTOM OF STRUCTURAL STEEL
BT WLD	BUTT WELD
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BV	BALL VALVE
BW	BOTH WAYS
BYP	BYPASS
°C	CELSIUS [DEGREES]
C–C	CENTER TO CENTER
C/C	COOLING COIL
CA	COMPRESSED AIR
CACU	COMPUTER AIR CONDITIONING UNIT
CAP	CAPACITY
CB	CATCH BASIN, CHEMICAL BUILDING
CC	CUBIC CENTIMETER
CCW	COUNTERCLOCKWISE
CD	CONDENSATE DRAIN
CF	CHEMICAL FEED
CFCI	CNTRCTR. FURNISHED/CNTRCTR. INSTALLED
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CH	CHILLER
CHW	CHILLED WATER
CHWP	CHILLED WATER PUMP
CHWPP	CHILLED WATER PRIMARY PUMP
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CHWSP	CHILLED WATER SECONDARY PUMP
CI	CAST IRON
CIP	CAST IRON PIPE
CKT	CIRCUIT
CKV	CHECK VALVE
CL	CENTER LINE (℄)
CLG LOAD	COOLING LOAD
CMP	CORRUGATED PIPE
CNDS	CONDENSATE
COEF	COEFFICIENT
COMPR	COMPRESSOR
COND	CONDENSER
CONDN	CONDENSATION
CONN	CONNECTION
CPLG	COUPLING
CRP	CONDENSATE RETURN PUMP
CT	COOLING TOWER
CU	COPPER
CU FT	CUBIC FEET
CU IN	CUBIC INCH
CUH	CABINET UNIT HEATER
Cv	COEFFICIENT – VALVE FLOW
CW	CLOCKWISE, CONDENSER WATER
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
DB	DRY BULB
DBT	DRY BULB TEMPERATURE
dB	DECIBEL
DC	DIRECT CURRENT
DCW	DOMESTIC COLD WATER
DDC	DIRECT DIGITAL CONTROL
DDCFP	DIRECT DIGITAL CONTROL FIELD PANEL
DEG	DEGREES [CELSIUS OR FAHRENHEIT]
DENS	DENSITY
DEWPT	DEW POINT TEMPERATURE
DIA	DIAMETER
DIFF	DIFFERENCE OR △
DIP	DUCTILE IRON PIPE
DIV	DIVISION
DOV	DRAIN OFF VALVE
DPS	DIFFERENTIAL PRESSURE SENSOR
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DR	DRAIN
DWV	DRAIN, WASTE & VENT
E/P	ELECTRIC PNEUMATIC
EAT	ENTERING AIR TEMPERATURE
ECC	ECCENTRIC
ECON	ECONOMIZER
ECU	EVAPORATIVE COOLING UNIT
EDBT	ENTERING DRY BULB TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EL	ELEVATION
ENT	ENTERING
EOV	ELECTRONICALLY OPERATED VALVE
EQIV	EQUIVALENT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK, ENTERING TEMPERATURE
EVAP	EVAPORATOR
EWBT	ENTERING WET BULB TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
EXCH	EXCHANGER
EXH	EXHAUST
EXP	EXPANSION
EXP JT	EXPANSION JOINT
FA	FACE AREA, FREE AREA
FB	FILTER BUILDING
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FDW	FEEDWATER
F–F	FACE to FACE
°F	FAHRENHEIT [DEGREES]
FL SW	FLOW SWITCH
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE CONNECTION
FLG	FLANGE
FL	FLOW LINE (℄)
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP

FLTR	FILTER
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FSS	FLOW SENSING SWITCH
FSTAT	FREEZE STAT
FT	FLOW TRANSMITTER, FOOT, FEET
FT LB	FOOT–POUND
FP	FREEZING POINT
FTR	FINNED TUBE RADIATION
FURN	FURNACE, FURNISH
FVEL	FACE VELOCITY
FVNR	FULL VOLTAGE NON–REVERSING
GA	GAUGE (INSTRUMENT), GAGE (THICKNESS)
GAL	GALLON
GEN	GENERATOR, GENERAL
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GLV	GLOBE VALVE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GLYCOL RETURN, GRAINS
GS	GLYCOL SUPPLY
GSH	GRAND SENSIBLE HEAT
GTD	GREATEST TEMPERATURE DIFFERENCE
GTH	GRAND TOTAL HEAT
GTV	GATE VALVE
HB	HOSE BIBB
HC	HEATING COIL, HOSE CABINET
HCONN	HOSE CONNECTOR
HCR	HOT OR COLD WATER RETURN (DUAL TEMP)
HCS	HOT OR COLD WATER SUPPLY (DUAL TEMP)
HD	HEAD
HEX	HEAT EXCHANGER
HG	MERCURY, HEAT GAIN
HGR	HANGER
HGT	HEIGHT
HP	HEAT PUMP, HIGH PRESSURE, HORSEPOWER
HPB	HIGH PRESSURE BOILER
HPDT	HIGH PRESSURE DRIP TRAP
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HPW	HIGH PRESSURE WATER
HR	HOUR
HS	HUMIDITY SENSOR
HSH	HUMIDITY SENSOR HIGH LIMIT
HSTAT	HUMIDISTAT
HTHW	HIGH TEMPERATURE HOT WATER
HV	HOSE VALVE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HW	HEATING WATER
HWB	HEATING WATER BOILER
HWC	HEATING WATER COIL
HWCP	HEATING WATER CIRCULATING PUMP
HWP	HEATING WATER PUMP
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
HWT	HEATING WATER TANK
HYD	HYDRANT
HZ	HERTZ (FREQUENCY)
I/O	INPUT/OUTPUT
IA	INSTRUMENT AIR
ICW	INDUSTRIAL CITY WATER (NON–POTABLE)
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IHP	INDICATED HORSEPOWER
IN WC	INCHES WATER COLUMN
INSTR	INSTRUMENT
INV	INVERT
IP	IRON PIPE
IPS	IRON PIPE SIZE, INCHES PER SECOND
IPT	IRON PIPE THREADED
IR	INFRARED
IW	INDIRECT WASTE, INDUSTRIAL WASTE
K	KELVIN, THERMAL CONDUCTIVITY
KIP	THOUSAND POUNDS
KIP FT	THOUSAND FOOT–POUNDS
KW	KILOWATT
KWh	KILOWATT HOUR
LAT	LEAVING AIR TEMPERATURE
LB	POUNDS
LDBT	LEAVING DRY BULB TEMPERATURE
LF	LINEAR FEET
LG	LENGTH
LH	LATENT HEAT
LHG	LATENT HEAT GAIN
LMTD	LEAST MEAN TEMPERATURE DIFFERENCE
LO	LUBRICATING OIL
LOP	LUBRICATING OIL PUMP
LOV	LUBRICATING OIL VENT
LP	LOW PRESSURE
LPAS	LOW PRESSURE ALARM SWITCH
LPB	LOW PRESSURE BOILER
LPC	LOW PRESSURE CONDENSATE
LPDT	LOW PRESSURE DRIP TRAP SET
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPS
LT	LEAVING TEMPERATURE
LTD	LEAST TEMPERATURE DIFFERENCE
LTHW	LOW TEMPERATURE HOT WATER
LVR	LOUVER
LWBT	LEAVING WET BULB TEMPERATURE
LWCO	LOW WATER CUT–OFF
LWT	LEAVING WATER TEMPERATURE
mA	MILLIAMPERES
MAU	MAKE UP AIR UNIT
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MB	MIXING BOX
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MCF	THOUSAND CUBIC FEET
MDC	MOTOR DIRECT CONNECT
MET	MEAN EFFECTIVE TEMPERATURE
MHP	MOTOR HORSEPOWER
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MOV	MOTOR OPERATED VALVE
MP	MEDIUM PRESSURE
MPC	MEDIUM PRESSURE CONDENSATE
MPH	MILES PER HOUR
MPS	MEDIUM PRESSURE STEAM
MPT	MALE PIPE THREAD
MTD	MEAN TEMPERATURE DIFFERENCE
MTHW	MEDIUM TEMPERATURE HOT WATER
MU	MAKE–UP WATER
NA	NOT APPLICABLE
NC	NOISE CRITERIA, NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN, NUMBER
NPS	NOMINAL PIPE SIZE
NR	NOISE REDUCTION
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAF	OUTSIDE AIR FAN
OAI	OUTSIDE AIR INTAKE
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFD	OVERFLOW DRAIN
OGA	OIL GAUGE
OLVL	OIL LEVEL
OPRS	OIL PRESSURE
ORD	OVERFLOW ROOF DRAIN
OS	OIL SWITCH
OSL	OIL SEAL
OSP	OPERATING STEAM PRESSURE
OTG	OIL TEMPERATURE GAUGE
OVFL	OVERFLOW
OZ	OUNCE
P	PUMP
P/E	PNEUMATIC ELECTRIC
%	PERCENT
PA	PIPE ANCHOR
PC	PUMPED CONDENSATE
PCC	PRECOOL COIL
PCD	PUMPED CONDENSATE DISCHARGE
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP, PRESSURE DIFFERENTIAL

PDISCH	PUMP DISCHARGE
PMPSCT	PUMP SUCTION
POS	POSITIVE, PROVIDED BY OTHER SECTION
PE	PNEUMATIC ELECTRIC
PR	PUMPED RETURN
PRESS SW	PRESSURE SWITCH
PG	PRESSURE GAUGE
PH	PHASE
PHC	PREHEAT COIL
PHWR	PRIMARY HEATING WATER RETURN
PHWS	PRIMARY HEATING WATER SUPPLY
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PRV	PRESSURE REGULATING VALVE
PPM	PARTS PER MILLION
PLBG	PLUMBING
PRESS	PRESSURE
PRI	PRIMARY
PS	PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
PSIG	POUNDS PER SQUARE INCH GAUGE
PSL	PIPE SLEEVE
PSV	PRESSURE SAFETY VALVE
PT	PIPE THREAD, PNEUMATIC TUBE
PTAC	PACKAGED TERMINAL AIR CONDITIONER
BTRV	PRESSURE TEMPERATURE RELIEF VALVE
	TOTAL, TOTAL HEAT
BT	QUART
QTY	QUANTITY
	RELIEF, THERMAL RESISTANCE
R–12,R–22	REFRIGERANT (12, 22, etc.)
RA	RETURN AIR
RAC	ROOM AIR CONDITIONER
RAD	RADIATOR
RCVR	RECEIVER
RECT	RECTANGULAR [DUCT]
REFR	REFRIGERATION
	REFRIGERANT DISCHARGE (HOT GAS),
RD	ROOF DRAIN
RET	RETURN
RED	REDUCER
REV	REVOLUTIONS
REF	REFERENCE
RFGT	REFRIGERANT
RGH	ROUGHNESS
	RELATIVE HUMIDITY
RHC	REHEAT COIL
RHG	REFRIGERANT HOT GAS
RHV	REHEAT VALVE
RLL	REFRIGERANT LIQUID LINE
RPM	REVOLUTIONS PER MINUTE
RPS	REVOLUTIONS PER SECOND
RSL	REFRIGERANT SUCTION LINE
BTU	ROOF TOP UNIT
RV	RELIEF VALVE
	SECOND
SA	SUPPLY AIR
SAT	SATURATION
SC	SHADING COEFFICIENT
SF	SAFETY FACTOR, SQUARE FEET
SHP	SHAFT HORSEPOWER
SG	SPECIFIC GRAVITY, STEAM GAUGE
SH	SENSIBLE HEAT
SH	SODIUM HYPOCHLORITE
SHG	SENSIBLE HEAT GAIN
SHGC	SOLAR HEAT GAIN COEFFICIENT
SHR	SENSIBLE HEAT RATIO
SHWR	SECONDARY HEATING WATER RETURN
SHWS	SECONDARY HEATING WATER SUPPLY
SLNT	SEALANT
SL	SEA LEVEL
SLV	SLEEVE
SMP	SUMP PUMP
SNSR	SENSOR
SOLV	SOLENOID VALVE
SOV	SHUT OFF VALVE
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SPF	SMOKE PURGE FAN
SPH	STATIC PRESSURE HIGH LIMIT
SPL	STATIC PRESSURE LOW LIMIT
SPLY	SUPPLY
SPS	STATIC PRESSURE SENSOR
SQ	SQUARE
SSP	STAINLESS STEEL PIPE
SST	STAINLESS STEEL
ST GEN	STEAM GENERATOR
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STM	STEAM
STR	STRAINER
STP	STANDARD TEMPERATURE & PRESSURE
STWP	STEAM WORKING PRESSURE
SUCT	SUCTION
SUP	SUPPLY
SV	SAFETY VALVE
TS	TEMPERATURE SENSOR
T&P	TEMPERATURE AND PRESSURE [VALVE]
TA	THROWAWAY
TC	THERMOCOUPLE
TCHS	TERTIARY CHILLED WATER SUPPLY
TCHR	TERTIARY CHILLED WATER SUPPLY
TCP	TEMPERATURE CONTROL PANEL
TCV	TEMPERATURE CONTROL VALVE
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE, TEMPORARY
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
THK	THICK(NESS)
TMH	TOP OF MANHOLE
TNL	TUNNEL
TR	TONS OF REFRIGERATION
TOP	TOP OF PIPE
TRANS	TRANSFER
T	TUBE STEEL
TSTAT	THERMOSTAT
U	HEAT TRANSFER COEFFICIENT
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VENT, VOLTS
VAC	VOLTS ALTERNATING CURRENT
VAP PR	VAPOR PRESSURE
VAR	VARIABLE
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VDC	VOLTS DIRECT CURRENT
VEL	VELOCITY
VENT	VENT, VENTILATION
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VISC	VISCOSITY
VP	VELOCITY PRESSURE
VSD	VARIABLE SPEED DRIVE
W	WATT
WB	WET BULB
WBT	WET BULB TEMPERATURE
WC	WATER COLUMN
WCHR	WATER CHILLER
WCLD	WATER COOLED
WG	WATER GAGE
WH	WALL HUNG, WATT HOUR
WL	WATER LINE
WLD	WELDED
WM	WATER METER
WNF	WELD NECK FLANGE
WP	WATER PUMP
WPD	WATER PRESSURE DROP
WPR	WORKING PRESSURE DROP
WSP	WORKING STEAM PRESSURE
WT	WEIGHT
YD	YARD, YARD DRAIN
YR	YEAR
Z	ZONE

GENERAL NOTES

1. PIPING CONNECTIONS TO ALL EQUIPMENT SHALL BE FABRICATED WITH THE ISOLATION VALVES, FLANGES AND/OR UNIONS POSITIONED TO ALLOW REMOVAL AND SERVICE OF THE COMPONENT PARTS.
2. ROUTE PIPING IN AN ORDERLY MANNER AND MAINTAIN PROPER GRADES. INSTALL TO CONSERVE HEADROOM AND TO CREATE MINIMUM INTERFERENCE WITH USE OF SPACE. ROUTE ALL PIPING PARALLEL TO BUILDING LINES UNLESS OTHERWISE NOTED. GROUP PIPING AT COMMON BOTTOM OF PIPE ELEVATIONS WHENEVER PRACTICAL. PIPES LOCATED IN CONCEALED SPACES SHALL BE ROUTED CLOSE TO BUILDING STRUCTURE UNLESS OTHERWISE NOTED.
3. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE OR EQUIPMENT CONNECTED.
4. INSTALL VALVES AND EQUIPMENT IN ACCESSIBLE LOCATIONS. INSTALL ACCESS DOORS IN PARTITIONS WHERE VALVES AND EQUIPMENT WOULD OTHERWISE BE INACCESSIBLE.
5. WHEN SOCKET WELD OR SOLDER END VALVES ARE INSTALLED, SPECIAL CARE SHALL BE TAKEN TO AVOID OVERHEATING AND DAMAGING THE VALVE BODY, TRIM OR PACKING. DAMAGED VALVES SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
6. IDENTIFY EACH PIPE WITH LABELING AS REQUIRED BY AUSTIN WATER SPECIFICATIONS.
7. SLEEVE ALL PIPING THAT PENETRATES FIRE RATED WALLS, FLOORS AND PARTITIONS. PENETRATIONS SHALL BE SEALED WITH A U.L. LISTED ASSEMBLY TO PROVIDE A RATING EQUAL TO OR GREATER THAN THAT OF THE PENETRATED WALL, FLOOR OR PARTITION.
8. SLEEVE ALL PIPING THAT PENETRATES EXTERIOR BUILDING WALLS. SEAL PENETRATIONS WATERTIGHT.
9. COORDINATE WITH OTHER TRADES BEFORE FABRICATION OR INSTALLATION OF ANY SYSTEMS.
10. THESE DRAWINGS DO NOT NECESSARILY SHOW ALL OFFSETS OR ELEVATION DIFFERENCES WHICH MAY BE NECESSARY FOR THE COMPLETE INSTALLATION. THESE SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE CONTRACT.
11. ALL SUPPLY AND OUTSIDE AIR DUCT SHALL BE EXTERNALLY INSULATED.
12. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF CEILING–MOUNTED HVAC DEVICES AND EQUIPMENT.
13. DUCT ROUTING CHANGES MADE BY THE CONTRACTOR FOR THE PURPOSE OF ACCOMMODATING FIELD CONDITIONS SHALL INCLUDE FIRE DAMPERS IN RATED PARTITIONS AS SHOWN IN ORIGINAL ROUTING ARRANGEMENTS.
14. FURNISH AND INSTALL ACCESS DOORS (AD) IN THE DUCTWORK IMMEDIATELY ADJACENT TO EACH FIRE DAMPER. PARTITIONS SHALL BE PROVIDED WITH ACCESS DOORS TO PROVIDE SERVICE AND ACCESS TO DAMPER ACCESS DOORS.
15. PROVIDE FIRE AND COMBINATION FIRE/SMOKE DAMPERS WHERE REQUIRED BY CODE. FIRE, SMOKE, AND COMBINATION FIRE/SMOKE DAMPERS SHALL BE UL LISTED, SHALL BEAR THE UL LABEL AND SHALL COMPLY WITH NFPA BULLETIN NO. 90A. FULLY–OPEN DAMPERS SHALL NOT HAVE ANY PROJECTIONS INTO THE AIRSTREAM.
16. ALL DUCT SIZES SHOWN HEREIN REPRESENT INSIDE CLEAR DIMENSIONS. EXTERNAL SHEET METAL DIMENSIONS OF INTERNALLY–LINED DUCTWORK SHALL BE ADJUSTED BY THE CONTRACTOR TO ALLOW FOR THICKNESS OF LINING.
17. ANY AND ALL WATER CONNECTIONS MADE FOR THE PURPOSE OF CLEANING TOOLS OR THE WORK AREA OR FOR ANY OTHER CONSTRUCTION–RELATED PURPOSES SHALL BE MADE ONLY TO DOMESTIC WATER HOSE BIBBS OR TO CONTRACTOR–SUPPLIED WATER SOURCES. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE USED AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. CONNECTIONS SHALL NOT BE MADE TO FIRE WATER, CHILLED WATER, CONDENSER WATER, HEATING HOT WATER, DOMESTIC HOT WATER OR ANY OTHER TREATED WATER SOURCE UNLESS REQUIRED AS PART OF WORK ON THESE SYSTEMS.
18. PROVIDE ESCUTCHEON PLATES WHERE PIPES EXPOSED TO VIEW PENETRATE FINISHED WALLS, FLOORS AND CEILINGS. SPLIT–RING ESCUTCHEON PLATES SHALL NOT BE USED UNLESS OTHERWISE NOTED.
19. REFER TO THE ARCHITECTURAL LIFE SAFETY PLAN DRAWINGS FOR CONSTRUCTION RATING WITH IN THE BUILDING.
20. THIS DRAWING IS BASED ON EXISTING DRAWING DATED MAY 2011, PROVIDED BY OWNER.
21. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING MECHANICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
22. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.
23. WHERE REMOVAL OF EXISTING PIPING IS NECESSARY, THE PIPING SHALL BE PATCHED AND SEALED PRESSURE TIGHT IN ACCORDANCE WITH PREVAILING SPECIFICATIONS.
24. COORDINATE ALL REMODEL WORK WITH NEW CONSTRUCTION AND OTHER TRADES.
25. NOTIFY AND COORDINATE WITH BUILDING OWNER PRIOR TO SHUTDOWN OF ANY EQUIPMENT. SHUTDOWN TIME TO BE MINIMUM.
26. ANY ITEMS DAMAGED DURING DEMOLITION ARE TO BE REPLACED WITH NEW MATERIALS TO MATCH EXISTING.
27. TO KEEP OTHER AREAS IN OPERATION DURING REMODELING ALL CONTRACTORS SHALL PROVIDE TEMPORARY DUCTWORK, ELECTRICAL SERVICE AND PIPING AS REQUIRED. NOTIFY THE BUILDING OWNER PRIOR TO SHUT–DOWN FOR ANY TEMPORARY SERVICE.
28. ALL DISCONNECTED PIPING SHALL BE REMOVED, NOT ABANDONED IN PLACE. ENGINEER'S APPROVAL IS REQUIRED TO ABANDON IN PLACE. REMAINING PIPING CAPPED WHERE INDICATED ON THE DRAWINGS AND SEALED PRESSURE TIGHT.
29. NEW HOLES THROUGH EXISTING FLOORS SHALL BE CORE DRILLED. BEAMS AND JOIST LEGS SHALL BE AVOIDED.
30. MAINTAIN ACCESS AROUND EQUIPMENT FOR EASE OF FACILITY MAINTENANCE.

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

Firm Registration No. 15868 Page Southerland Page, Inc.

STATE OF TEXAS
BREANNE D. HANSON
115706
LICENSED
PROFESSIONAL ENGINEER

19 MAR 2021

MECHANICAL
GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

DRAWN BY	CHECKED BY
HR	BH
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
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M-001

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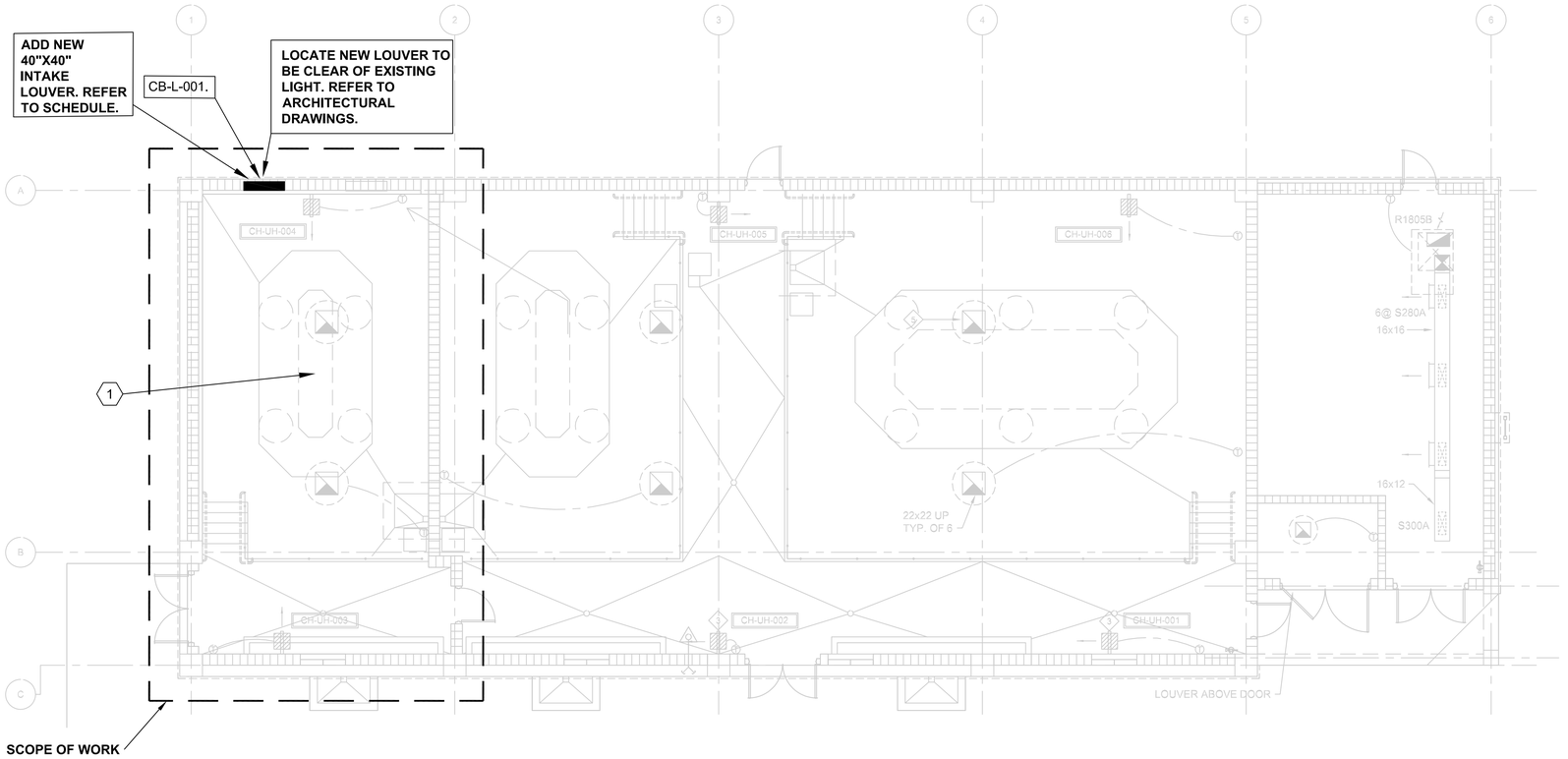
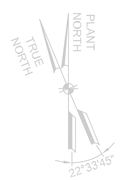


CHEMICAL BUILDING LOWER LEVEL MECHANICAL FLOOR PLAN

1 SCALE: 3/16"=1'-0"



KEYED NOTES

1. THE FLOURIDE ROOM WAS IDENTIFIED AS UNCOMFORTABLE DUE TO LOW VENTILATION. THE EXISTING EXHAUST FANS WILL BE REPLACED AND A NEW INTAKE LOUVER IS TO BE ADDED TO PROVIDE ADDITIONAL VENTILATION AIRFLOW TO THE SPACE.

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-80-H01, DATED MAY 2011, PROVIDED BY OWNER.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING MECHANICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

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BREANNE D. HANSON
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PROFESSIONAL ENGINEER

19 MAR 2021

CHEMICAL BUILDING
LOWER LEVEL
MECHANICAL FLOOR PLAN

DRAWN BY	CHECKED BY
HR	BH
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

CB-M-101
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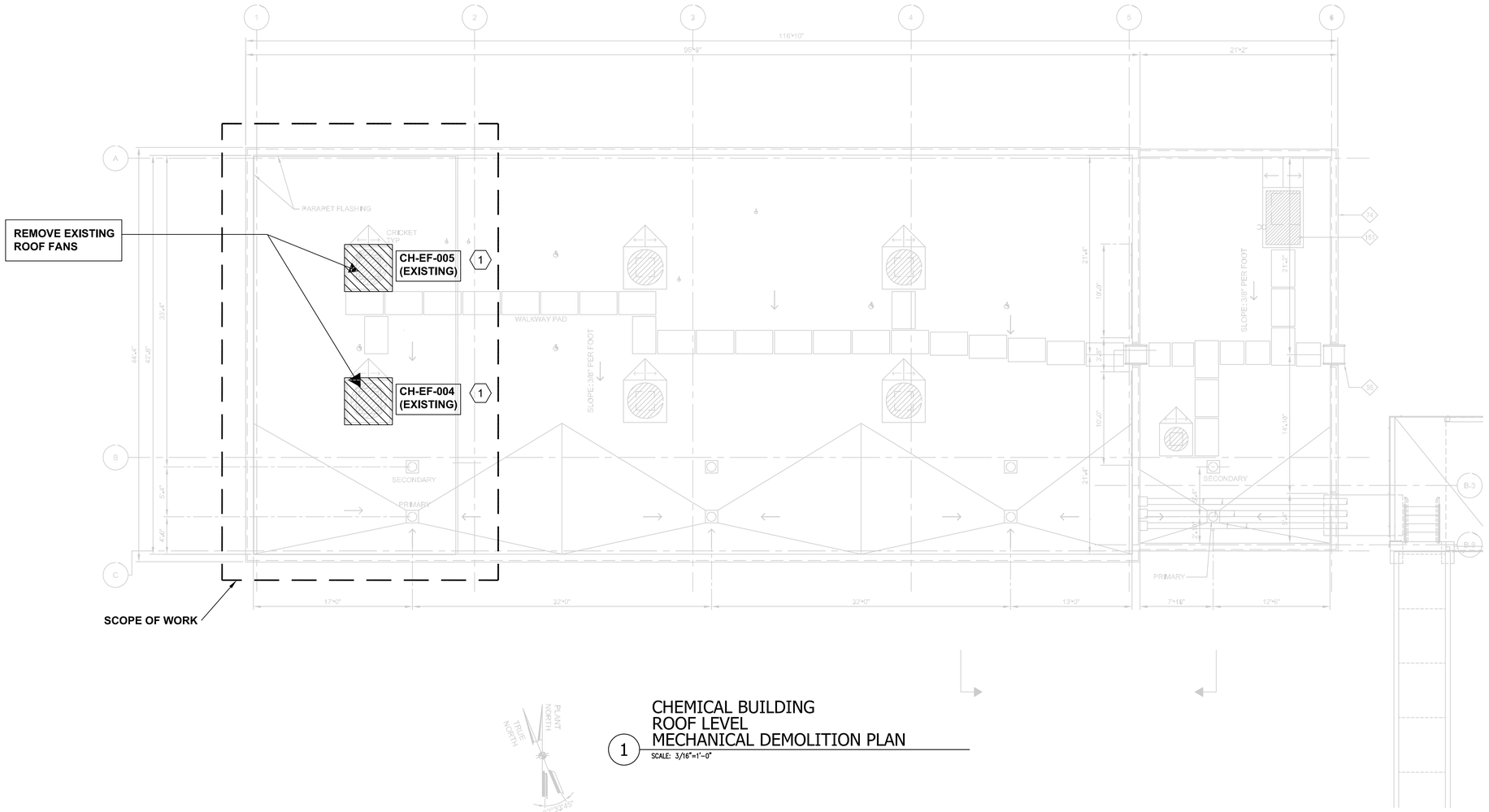

CHEMICAL BUILDING ROOF LEVEL MECHANICAL DEMOLITION PLAN

1 SCALE: 3/16"=1'-0"

KEYED NOTES

1. FIELD VERIFY EXISTING ROOF CURB CONDITIONS FOR NEW FAN ENLARGER ADAPTER AND NEW EXHAUST FAN.

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-80-AC3, DATED MAY 2011, PROVIDED BY OWNER.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING MECHANICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

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STATE OF TEXAS
BREANNE D. HANSON
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PROFESSIONAL ENGINEER
19 MAR 2021

CHEMICAL BUILDING
ROOF LEVEL
MECHANICAL DEMOLITION PLAN

DRAWN BY: HR	CHECKED BY: BH
PROJECT NUMBER: 119401	PROJECT ABBREVIATION: COA HWTP
ORIGINAL ISSUE: IFC	DATE: 19 MAR 2021

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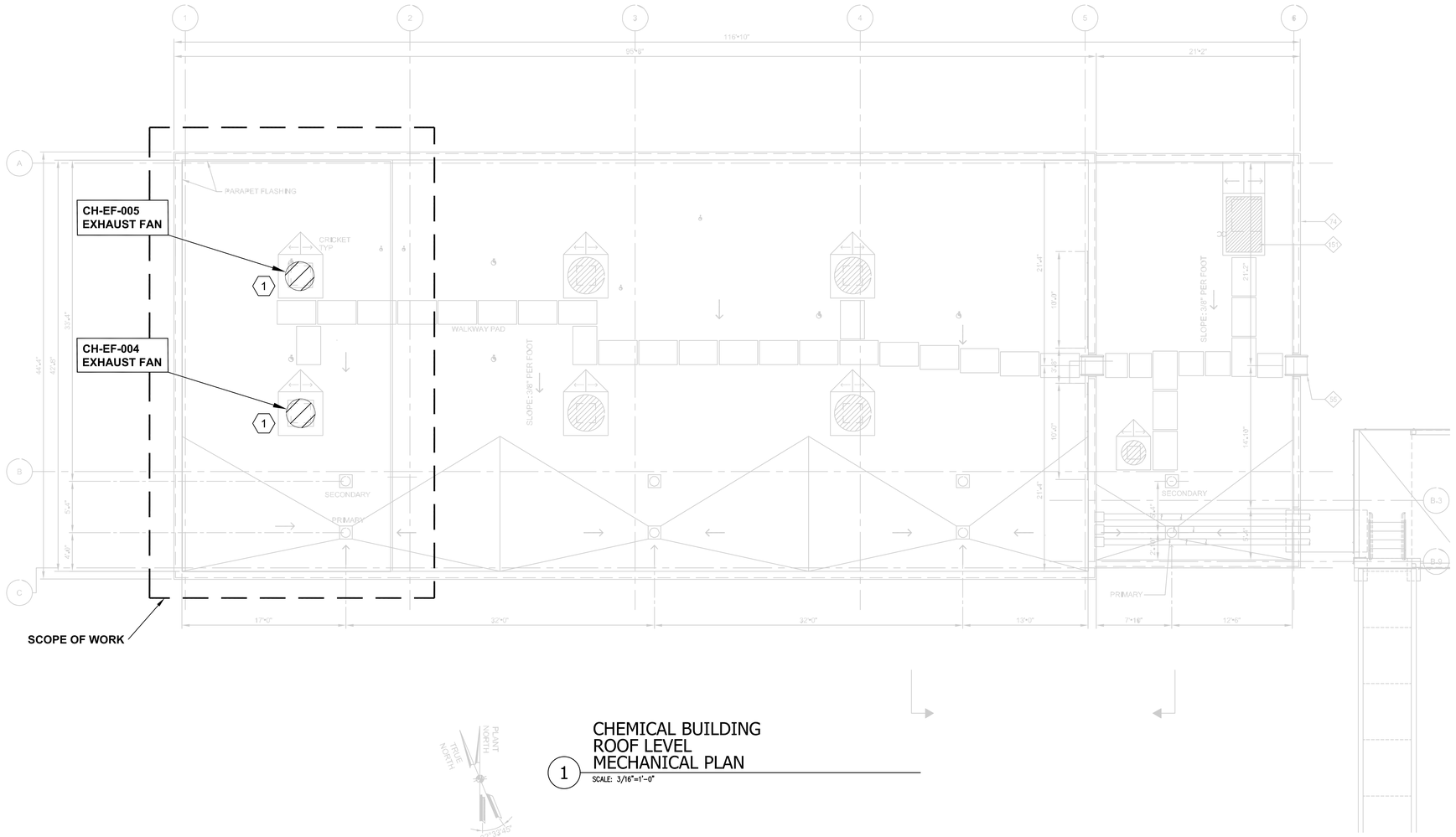

1 CHEMICAL BUILDING ROOF LEVEL MECHANICAL PLAN

SCALE: 3/16"=1'-0"

KEYED NOTES

1. PROVIDE ROOF CURB ADAPTER. INSTALL ROOF CURB PER MANUFACTURER'S RECOMMENDATIONS.

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-80-AC3, DATED MAY 2011, PROVIDED BY OWNER.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING MECHANICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
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REVISION HISTORY

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PROFESSIONAL SEALS

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19 MAR 2021

CHEMICAL BUILDING
ROOF LEVEL
MECHANICAL PLAN

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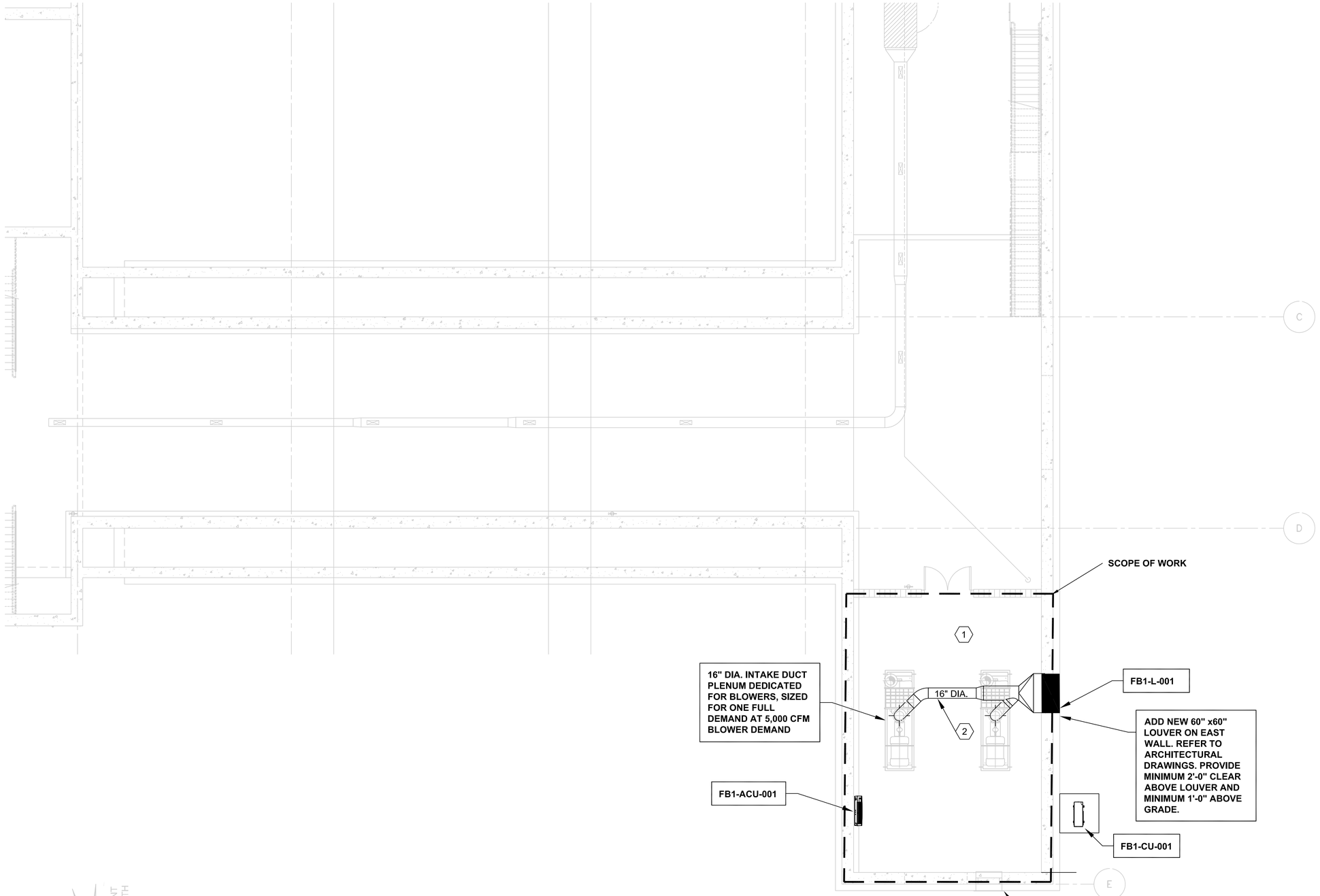
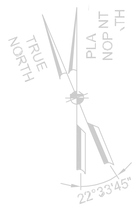


1 FILTER BUILDING
GROUND LEVEL
MECHANICAL FLOOR PLAN
SCALE: 3/16"=1'-0"



KEYED NOTES

1. THE EXISTING BLOWER ROOM IS WARM AND LACKS AIRFLOW CAUSING THE DOUBLE DOORS TO THE ROOM TO REMAIN PROPPED OPEN BY STAFF. AN ADDITIONAL LOUVER IS TO BE ADDED TO CONNECT TO A DUCT PLENUM THAT WILL ALLOW THE BLOWERS TO DRAW DIRECT OUTSIDE AIR FOR THEIR INTAKE. A SPLIT DX HVAC SYSTEM IS BEING ADDED TO SUPPORT A 90 DEGREE SETPOINT TO THE SPACE.
2. REFER TO M-502 FOR ELEVATION DETAIL.

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-50-A00 DATED MAY 2011, PROVIDED BY OWNER.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING MECHANICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.

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0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS
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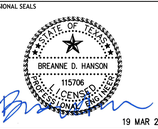

19 MAR 2021

FILTER BUILDING
GROUND LEVEL
MECHANICAL FLOOR PLAN

DRAWN BY	CHECKED BY
HR	BH
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
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FB1-M-101
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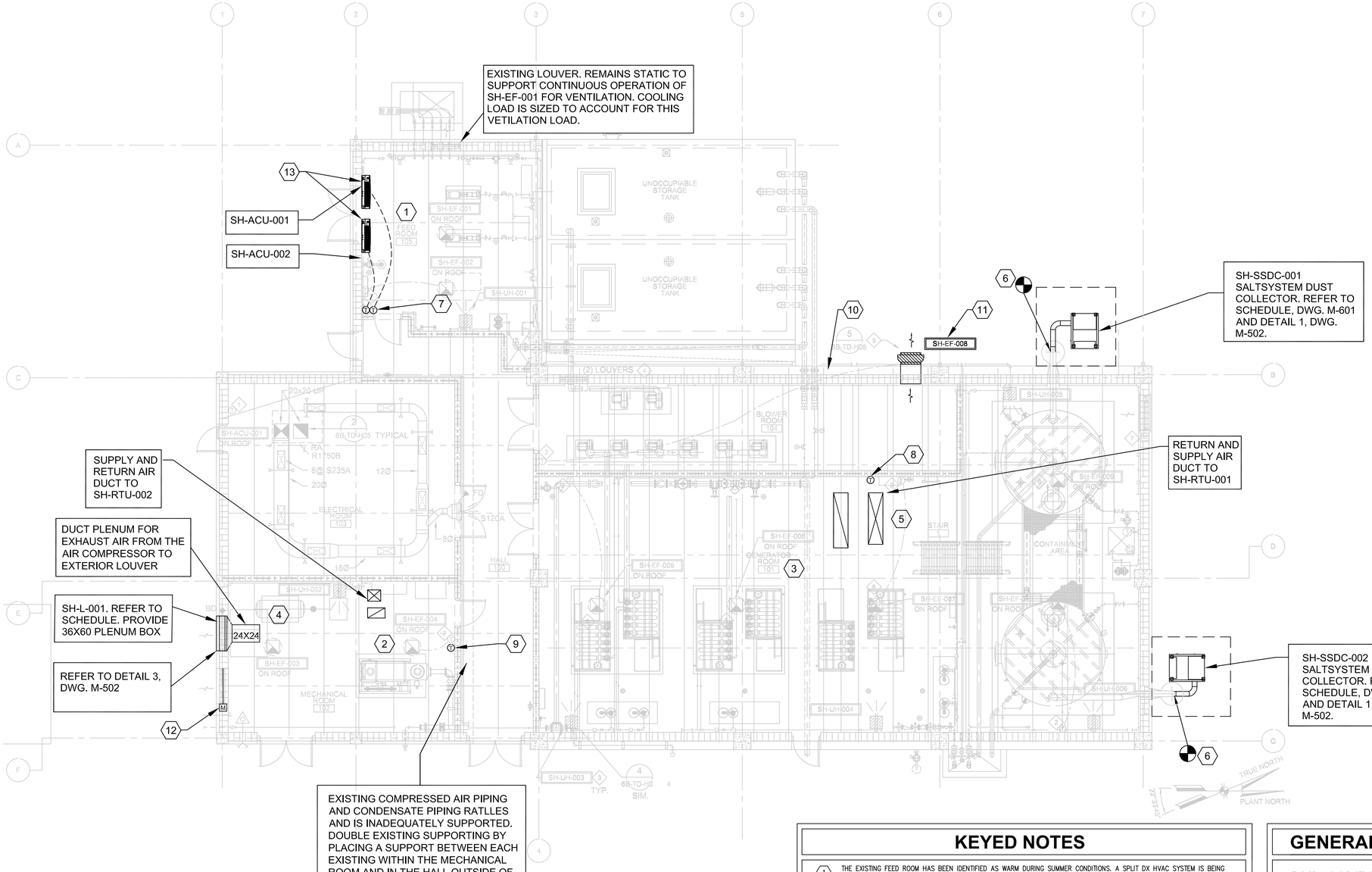

SODIUM HYPOCHLORITE BUILDING GROUND LEVEL MECHANICAL LEVEL FLOOR PLAN

1 SCALE: 3/16"=1'-0"

KEYED NOTES

1. THE EXISTING FEED ROOM HAS BEEN IDENTIFIED AS WARM DURING SUMMER CONDITIONS. A SPLIT DX HVAC SYSTEM IS BEING ADDED TO SUPPORT AN 80 DEGREE SETPOINT TO THE SPACE TO STAY ABOVE VENTILATION AIR DEW POINT TEMPERATURE.
2. THE EXISTING COMPRESSOR ROOM HAS BEEN IDENTIFIED AS WARM DURING SUMMER CONDITIONS AND THE AIR COMPRESSOR IN THE SPACE WILL SHUT DOWN ON HIGH TEMPERATURE. A ROOFTOP DX HVAC SYSTEM IS BEING ADDED TO SUPPORT AN 80 DEGREE SETPOINT TO THE SPACE TO STAY ABOVE VENTILATION AIR DEW POINT TEMPERATURE. A FLANGED, REMOVABLE DUCT PLENUM IS TO BE ADDED TO THE TOP EXHAUST VENT OF THE COMPRESSOR AND CONNECTED TO AN EXISTING EXTERIOR LOUVER.
3. THE EXISTING GENERATOR ROOM HAS BEEN IDENTIFIED AS WARM DURING SUMMER CONDITIONS. A ROOFTOP DX HVAC SYSTEM IS BEING ADDED TO SUPPORT AN 80 DEGREE SETPOINT TO THE SPACE TO STAY ABOVE VENTILATION AIR DEW POINT TEMPERATURE.
4. REPLACE EXISTING AIR COMPRESSOR PRE-FILTER, CLEAN THE COOLING SYSTEM COIL AND TOP OFF COOLANT LEVELS TO FURTHER ASSIST WITH OVER TEMPERATURE. AS RECOMMEND IN OEM MANUAL.
5. INSTALL AN FIBERGLASS DROP BOX DIFFUSER TO CONNECT TO ROOF TOP UNIT, SH-RTU-001 SUPPLY DUCT.
6. CONNECT TO EXISTING DUSTLINE.
7. T-STAT TO CONNECT TO SH-ACU-002 AND SH-ACU-003.
8. T-STAT TO CONNECT TO SH-RTU-001.
9. T-STAT TO CONNECT TO SH-RTU-002.
10. INSTALL DAMPER THAT WILL BE NORMALLY OPEN, FAIL OPEN. DURING SALT FILL THIS DAMPER SHALL BE CLOSED AND SH-EF-008 MUST BE OFF.SALT SYSTEM DUST COLLECTOR MANUFACTURER PROVIDED ON BOARD CONTROL PANE PROVIDES REMOTE START/STOP FEATURE UTILIZED TO INTERLOCK WITH NEW DAMPER AND EXISTING EF-008.
11. REPLACE SH-EF-008 LIKE FOR LIKE. REFERENCE EXHAUST FAN SCHEDULE. PRIOR TO SALT FILL CONFIRM SH-EF-008 IS OFF.
12. NEW BAROMETRIC DAMPER FOR EXISTING 48X48 LOUVER TO EQUALIZE ROOM PRESSURIZATION DURING COMPRESSOR EXHAUST.
13. SIZE AND ROUTE REFRIGERANT PIPING TO CONDENSING UNIT PER MANUFACTURER'S RECOMMENDATIONS.

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-81-H01, DATED MAY 2011.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING MECHANICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.

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REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS
Firm Registration No. 15668
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STATE OF TEXAS
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19 MAR 2021

SODIUM HYPOCHLORITE BUILDING GROUND LEVEL MECHANICAL FLOOR PLAN

DRAWN BY: HR	CHECKED BY: BH
PROJECT NUMBER: 119401	PROJECT ABBREVIATION: COA HWTP
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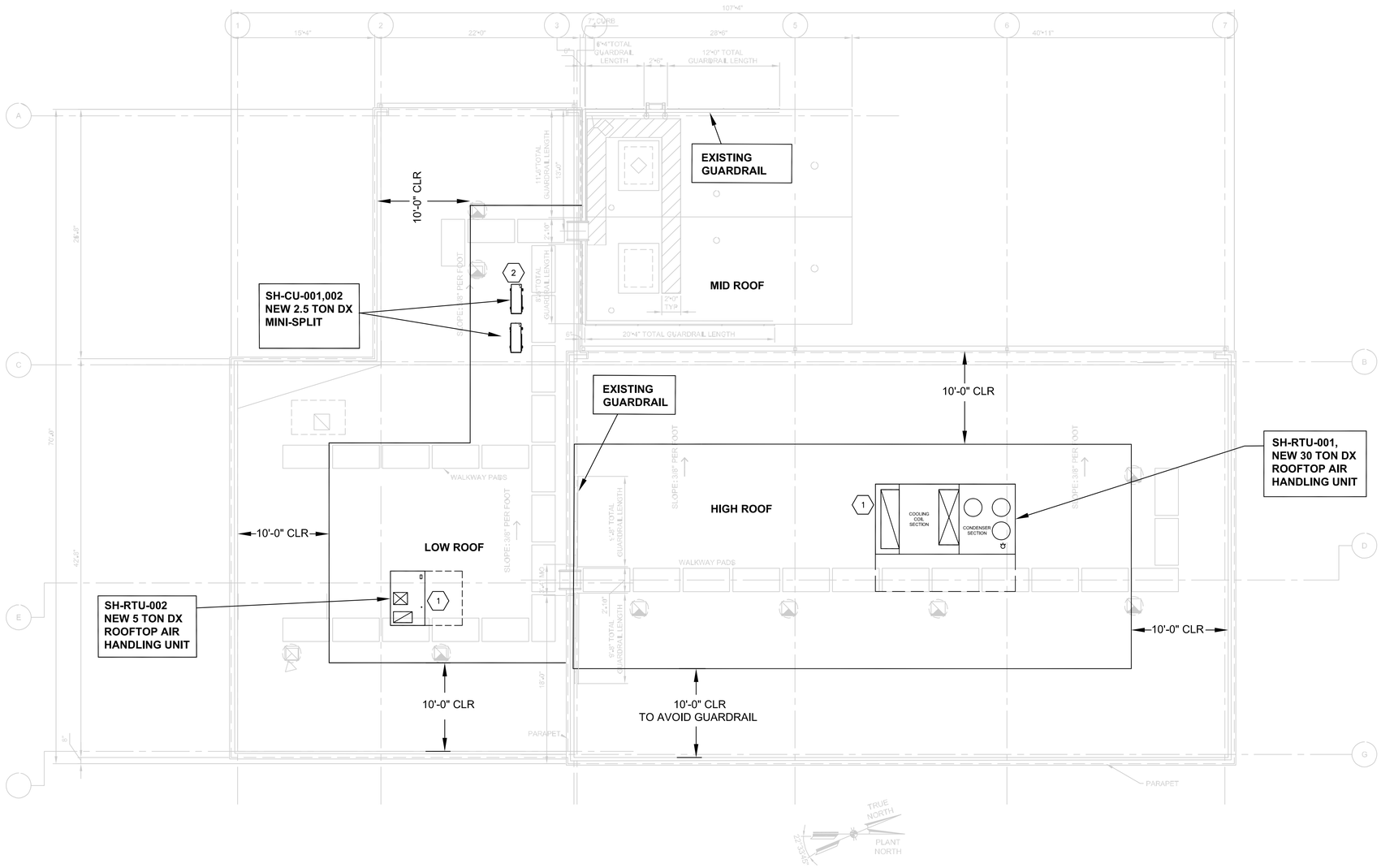

1 SODIUM HYPOCHLORITE BUILDING ROOF LEVEL MECHANICAL PLAN

SCALE: 3/16"=1'-0"

KEYED NOTES

1. REFER TO PLUMBING DRAWINGS FOR CONDENSATE DRAIN LINES.
2. SIZE AND ROUTE REFRIGERANT PIPING TO EVAPORATOR UNIT PER MANUFACTURER;S RECOMMENDATIONS.

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-81-A03, DATED MAY 2011, PROVIDED BY OWNER.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING MECHANICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS
Firm Registration No. 15688
Page Southerland Page, Inc.

STATE OF TEXAS
BREANNE D. HANSON
115706
LICENSED PROFESSIONAL ENGINEER
19 MAR 2021

SODIUM HYPOCHLORITE BUILDING ROOF LEVEL MECHANICAL PLAN

DRAWN BY	CHECKED BY
HR	BH
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
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SH-M-102
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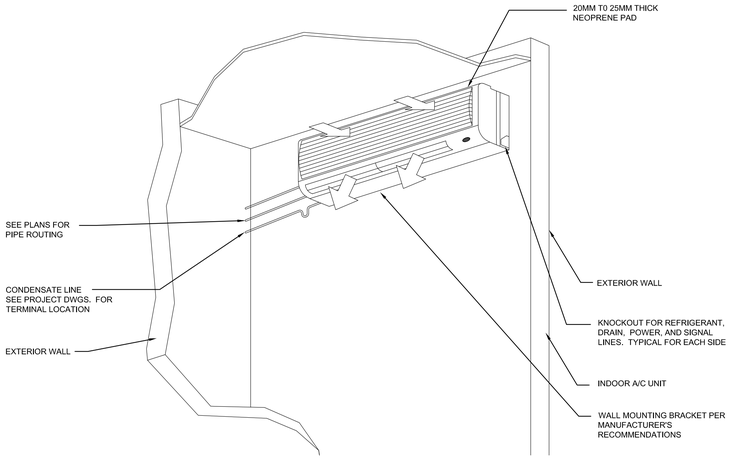
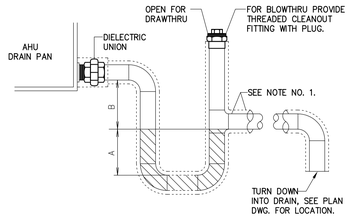


4 DUCTLESS SPLIT SYSTEM UNIT DIAGRAM
SCALE: NTS

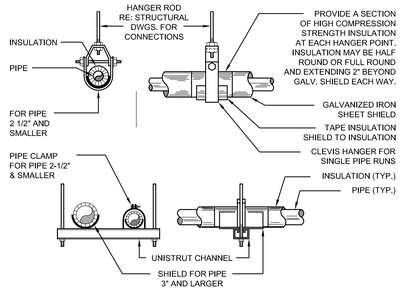


BLOWTHRU:
A = GREATER OF 4" OR 1/2" PLUS AHU TOTAL PRESSURE IN INCHES-WC.

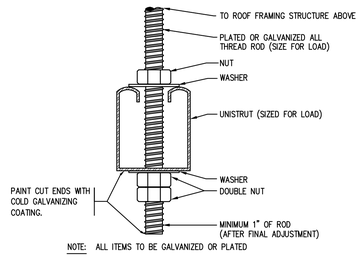
DRAWTHRU:
B = GREATER OF 2" OR 1/2" PLUS AHU TOTAL PRESSURE IN INCHES-WC

NOTES:
1. REF. PLAN DWG'S FOR CONDENSATE DRAIN PIPE SIZE, (1"ø MIN. AT EACH AHU DRAIN CONNECTION POINT). REF. SPECIFICATIONS FOR PIPE AND INSULATION MATERIAL REQUIREMENTS. SLOPE FOR PROPER RUN OFF.
2. MANUALLY PRIME FILL TRAP BEFORE STARTUP TO FORM INITIAL DRAIN SEAL.
3. SUPPORT LENGTHY DRAIN LINES TO PREVENT SAG AND CONDENSATE OVERFLOW.

3 CONDENSATE DRAIN TRAP DETAIL
SCALE: NTS

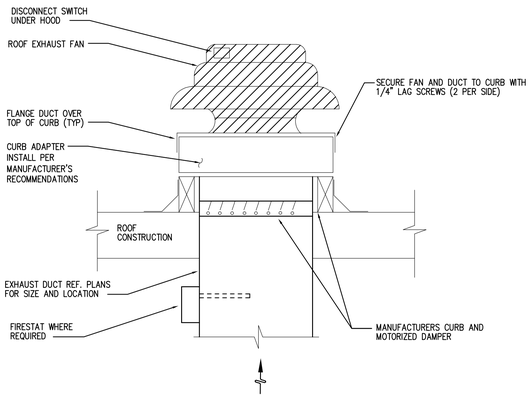


2 PIPING HANGER & SUPPORTS DETAIL
SCALE: NTS

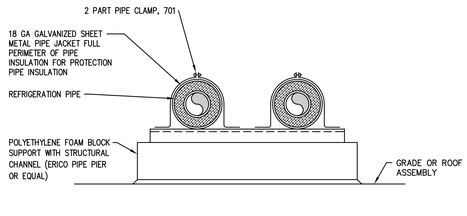


NOTE: ALL ITEMS TO BE GALVANIZED OR PLATED

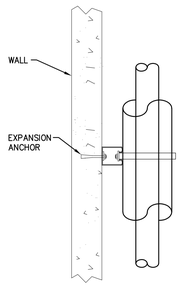
1 TYPICAL TRAPEZE HANGER DETAIL
SCALE: NTS

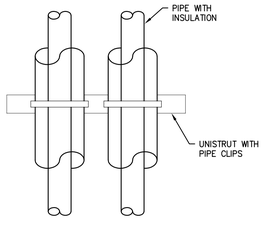


8 ROOF MOUNTED EXHAUST FAN DETAIL
SCALE: NTS



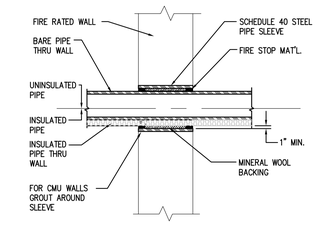
7 PIPE SUPPORT ON GROUND
SCALE: NTS



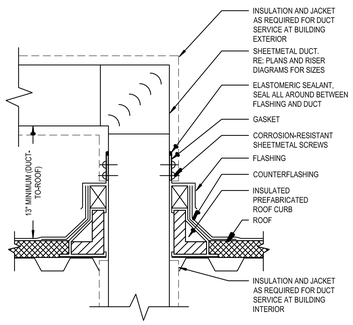


NOTES:
1.COORDINATE MATERIALS WITH SPACE CONDITIONS TO PREVENT CORROSION.

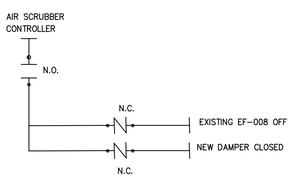
6 WALL PIPE SUPPORT
SCALE: NTS



5 REFRIGERANT PIPE THRU WALL
SCALE: NTS



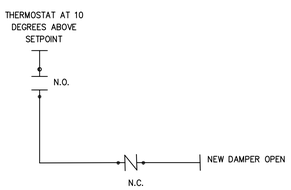
12 TYPICAL DUCT THRU ROOF DETAIL
SCALE: NTS



NOTES:

UPON AIR SCRUBBER CALL TO START UTILIZE IT'S REMOTE START/STOP OUTPUT TO INITIATE EXISTING EF-008 TO STOP (IF RUNNING) AND NEW DAMPER (WHICH IS NORMALLY OPEN) ON EXISTING LOUVER TO CLOSE.

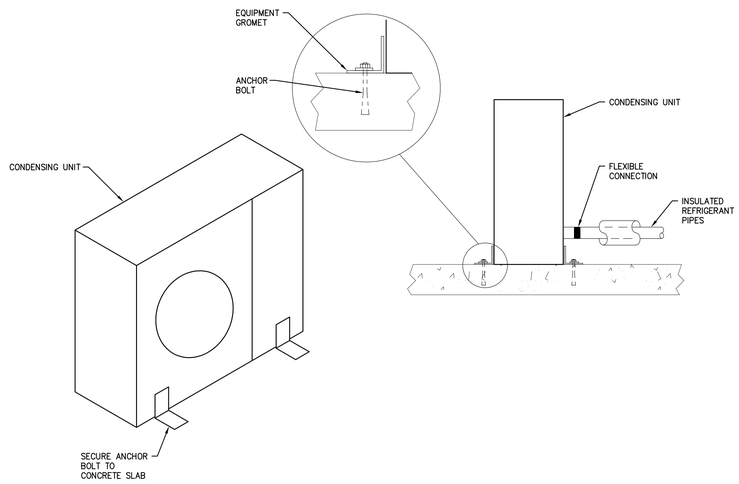
11 NEW DAMPER CONTROLS WIRING DIAGRAM FOR SH BUILDING
SCALE: NTS



NOTES:

WHEN BLOWER ROOM THERMOSTAT READS 10 DEGREES ABOVE SETPOINT (ADJ.) OPEN NEW DAMPER ON EXISTING LOUVER IN THE FILTER BUILDING.

10 NEW DAMPER CONTROLS WIRING DIAGRAM FOR FILTER BUILDING
SCALE: NTS



9 CONDENSING UNIT
SCALE: NTS

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REVISION HISTORY

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PROFESSIONAL SEALS
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19 MAR 2021

MECHANICAL DETAILS

DRAWN BY	CHECKED BY
HR	BH
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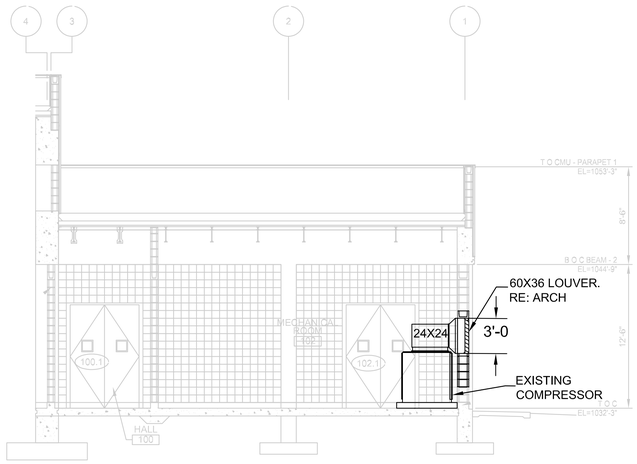
M-501
SHEET NUMBER



NOTES:

1. PROVIDE LOUVER WITH BACKDRAFT DAMPER.
2. REFER TO ARCH. DETAIL FOR LOUVER INSTALLATION.
3. EXHAUST DUCT TO RUN ENTIRE EXHAUST VENT ON EXISTING AIR COMPRESSOR. CONNECTION WITH NEOPRENE GASKET AT BOTTOM OF DUCT FLANGE.
4. PROVIDE FLANGE CONNECTION NEAR THE LOUVER SO THE EXHAUST CAN BE REMOVED IF THE COMPRESSOR REQUIRES MAINTENANCE.
5. CONTRACTOR TO COORDINATE EXISTING CONDITIONS.

3 MECHANICAL ROOM 102- COMPRESSOR DUCT EXHAUST

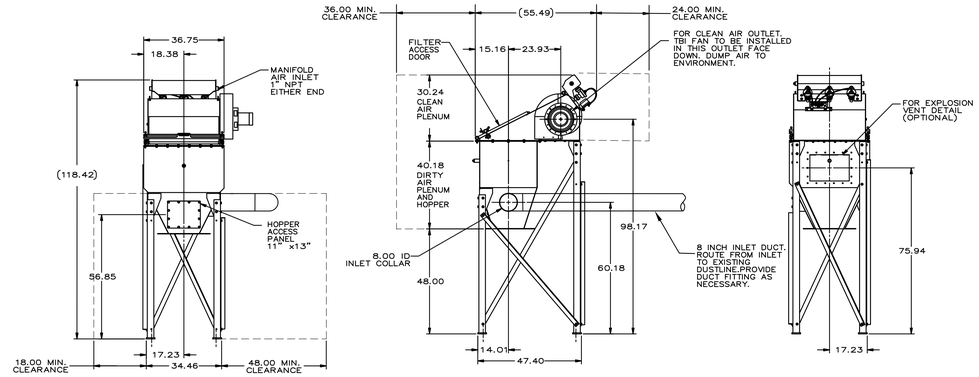
SCALE: NTS

NOTES:

1. PROVIDE INLINE FILTER:
   1.1. ENDUSTRA TRI-VENT SERIES K08 SIDE ACCESS INLINE INTAKE FILTER.
   1.2. 16" 125/150 # ANSI FLANGE DRILLING INLET/OUTLET (23-1/2 OD W/ QTY (16) 1-1/8 HOLES ON 21-1/4 BCD); BOLT HOLES STRADDLE CENTER LINES.
   1.3. 5000 SCFM @ 1/4 " WG MAX INITIAL; NOT TO EXCEED 12" WG.
   1.4. INCLUDES TRI VENT ELEMENT W/ ENDURALAST HI-FLOW SYNTHETIC MEDIUM, 98% EFFICIENCY 10-MICRON (NOM).
   1.5. NO-TOOLS ELEMENT CHANGES: OL= OPENS LEFT, SPECIFY DOOR CONFIGURATION.
2. DUCT SHALL BE 16 GAUGE OR BETTER, BUILT TO WITHSTAND 10" W.G. IN ACCORDANCE WITH SMACNA INCLUDING SEAL CLASS FOR AL TRANSVERSE JOINTS, LONGITUDINAL SEAMS AND DUCT WALL PENETRATIONS.

4 BLOWER ROOM - BLOWER INTAKE

SCALE: NTS

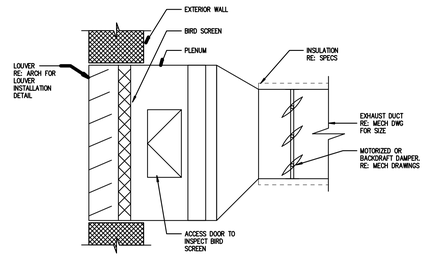


NOTES:

1. CLEARANCES SHOWN FOR AN RIGHT 8" INLET CONNECTION. SAME CLEARANCES WILL APPLY FOR THE LEFT CONNECTION.

1 SALT DUST COLLECTION SYSTEM

SCALE: NTS



2 EXHAUST/INTAKE AIR LOUVER CONNECTION

SCALE: NTS

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19 MAR 2021

MECHANICAL DETAILS

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HR	BH
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119401	COA HWTP
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M-502
SHEET NUMBER

ROOF TOP AIR HANDLING UNIT SCHEDULE

TAG	SERVES	SUPPLY AIR FAN				MOTOR CONTROL	DRIVE	REFRIGERANT TYPE	AMBIENT TEMP (°F)	COOLING CAPACITY								MIN. # EER	NOMINAL TONS	ELECTRICAL			UNIT WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
		SUPPLY (CFM)	O.A. (CFM)	ESP (IN-WG)	HP (MIN)					SENSIBLE (MBH)	TOTAL (MBH)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	MIN. # SCROLL	MIN. # STAGES			V/P/HZ	MCA	MOCP				
SH-RTU-001	SH GEN RM	12,000	-	1	7.5	VFD	BELT	410A	105	302.8	383.3	80	67	58	56	3	5	10.6	30.0	460/3/60	76.3	90	4,200	TRANE	TCD360	1-9, 11.
SH-RTU-002	SH COMP RM	1,800	-	1	1.5	ECM	DIRECT	410A	105	48.8	53.1	80	67	56	55	1	1	12.0	5.0	460/3/60	14	20	650	TRANE	TSC060	1-8, 10, 11.

NOTES:

1. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH ELECTRICAL PLANS & ELECTRICAL CONTRACTOR.
2. PROVIDE WITH THROUGH BASE ELECTRICAL CONNECTIONS, SINGLE POINT POWER , AND FACTORY NON-FUSED DISCONNECT SWITCH.
3. EXTERNAL S.P. INCLUDES AN ALLOWANCE FOR DIRTY CURB-MOUNTED HIGH EFFICIENCY FILTERS.
4. PROVIDE WITH HINGED ACCESS PANELS AND ONE SET OF 2" M8 FILTERS.
5. PROVIDE WITH FACTORY MOUNTED LOUVERED CONDENSER COIL HAIL GUARDS.
6. CONDENSER COIL SHALL INCLUDE FACTORY INSTALLED CORROSION PROTECTION COATING.
7. PROVIDE WITH STAND-ALONE, 7-DAY TYPE PROG. ZONE SENSOR FOR COOLING CONTROLS.
8. PROVIDE WITH FACTORY MOUNTED, PROGRAMMED AND COMMISSIONED SUPPLY FAN VFD W/BYPASS AND SHAFT GROUNDING RING ON MOTOR. UNIT SHALL BE FACTORY PROGRAMMED FOR SINGLE ZONE VAV CONTROLS.
9. PROVIDE WITH CUSTOM FLAT ROOF CURB IN ORDER TO TRANSITION SUPPLY/RETURN DUCT TO FIT IN BETWEEN EXISTING ROOF JOISTS. CURB TO BE MIN. 24" TALL IN ORDER TO MAKE TRANSITION WITHIN CURB. SEE PLANS FOR FURTHER DETAILS.
10. PROVIDE WITH 14" TALL, FLAT CURB.
11. PROVIDE UNIT WITH MANUFACTURER PROVIDED CONVENIENCE OUTLET, MUST BE GFCI.

DX MINI-SPLIT CONDENSING UNIT (CU) SCHEDULE

MARK	CU SERVICE	LOCATION	TOTAL CAPACITY (BTUH)	AMBIENT TEMP. (°F)	COMPRESSOR		REFRIGERANT TYPE	ELECTRICAL DATA			UNIT WEIGHT (LBS)	MANUF.	MODEL	NOTES
					TYPE	NUMBER		V/PH/HZ	MOCP (A)	MCA (A)				
FB1-CU-001	FB1-ACU-001	FILTER BUILDING - EXTERIOR	36,000	105	INVERTER-DRIVEN TWIN ROTARY	1	410A	208/1/60	30	25	46	MITSUBISHI	PUY-A36NKA7	1, 2, 3, 4, 5, 6, 7.
SH-CU-001	SH-ACU-001	SH BUILDING - ROOF	30,000	105	INVERTER-DRIVEN TWIN ROTARY	1	410A	208/1/60	30	25	46	MITSUBISHI	PUY-A36NKA7	1, 2, 3, 4, 5, 6, 7.
SH-CU-002	SH-ACU-002	SH BUILDING - ROOF	30,000	105	INVERTER-DRIVEN TWIN ROTARY	1	410A	208/1/60	30	25	46	MITSUBISHI	PUY-A30NHA7-BS	1, 2, 3, 4, 5, 6, 7.

NOTES:

1. TRANE/MITSUBISHI IS BASIS OF DESIGN. CAPACITY RATING BASED ON ENTERING AIR TEMPERATURE AND AMBIENT CONDITIONS. REFER TO CORRESPONDING INDOOR UNIT PERFORMANCE ON AC UNIT SCHEDULE.
2. PROVIDE UNIT WITH SINGLE POINT ELECTRICAL CONNECTION. DIVISION 26 TO PROVIDE EXTERNAL DISCONNECT.
3. COORDINATE ELECTRICAL REQUIREMENTS WITH ELECTRICAL PLANS PRIOR TO SUBMISSION FOR ENGINEER TO REVIEW.
4. COORDINATE LINE SIZING WITH EQUIPMENT MANUFACTURER PRIOR TO ORDERING. IN GENERAL, TOTAL LINEAR LENGTH NOT TO EXCEED 100 FEET.
5. ALL CONDENSING UNITS TO INCLUDE LOW AMBIENT CONTROLS FOR COOLING DOWN TO 0°F.
6. PROVIDE NEOPRENE VIBRATION ISOLATORS TO THE CONDENSER UNITS.
7. HVAC UNITS NOT CONNECTING TO SITE BAS SHALL NEVERTHELESS REPORT TO LOUVER ACTUATORS CALL TO OPEN IF STATUS IS FAILED.

DX MINI-SPLIT AIR CONDITIONING UNIT (ACU) SCHEDULE

MARK	CU SERVICE	LOCATION	FCU TYPE	AIRFLOW (CFM)	CAPACITY (BTUH)		EAT (°F)		LAT (°F)		UNIT WEIGHT (LBS)	MANUF.	MODEL	NOTES
					SENSIBLE	TOTAL	DB	WB	DB	WB				
FB1-ACU-001	FB1-CU-001	FILTER BUILDING - BOWER ROOM	WALL MOUNTED	920	25,200	36,000	80	67	55	54	211	MITSUBISHI	PKA-A36KA7	1, 2, 3, 4, 5.
SH-ACU-001	SH-CU-001	SH BUILDING - FEED ROOM	WALL MOUNTED	775	21,000	30,000	80	67	55	54	151	MITSUBISHI	PKA-A30KA7	1, 2, 3, 4, 5.
SH-ACU-002	SH-CU-002	SH BUILDING - FEED ROOM	WALL MOUNTED	775	21,000	30,000	80	67	55	54	151	MITSUBISHI	PKA-A30KA7	1, 2, 3, 4, 5.

NOTES:

1. TRANE/MITSUBISHI IS BASIS OF DESIGN.
2. PROVIDE UNIT WITH POWER FROM OUTDOOR UNIT, ALONG WITH LOW VOLTAGE COMMUNICATION.
3. COORDINATE ELECTRICAL REQUIREMENTS WITH ELECTRICAL PLANS PRIOR TO SUBMISSION FOR ENGINEER TO REVIEW.
4. UNIT SHALL BE PROVIDED WITH INTEGRAL NON-FUSED DISCONNECT SWITCH, BACNET-ENABLED CONTROLLER WITH FAULT DETECTION DIAGNOSTICS, AND STAINLESS STEEL DRAIN PAN.
5. INDOOR FCU TO BE RATED WITH CORRESPONDING OUTDOOR UNIT.

LOUVER SCHEDULE

MARK	LOCATION	SIZE (IN)		LOUVER TYPE	FREE AREA (%)	MANUFACTURER	MODEL	NOTES
		WIDTH	HEIGHT					
CB-L-001	CHEMICAL BUILDING	40	40	WIND DRIVEN RAIN	53.2	GREENHECK	EVH-501	1, 2.
FB1-L-001	FILTER BUILDING - BLOWER ROOM	60	60	ACOUSTICAL	40	GREENHECK	AFJ-120	1, 2, 3.
SH-L-001	SH BUILDING- MECH ROOM	60	36	WIND DRIVEN RAIN	53.2	GREENHECK	EVH-501	1, 2.

NOTES:

1. PROVIDE ALUMINUM FRAME MATERIAL LOUVER WITH FLUOROPOLYMER FRAME FINISH.
2. PROVIDE BIRD SCREEN.
3. PROVIDE WITH EXTENDED SILL TO DRAIN TO EXTERIOR, REFERENCE ARCH FOR LOUVER AT EXTERIOR DETAIL.

EXHAUST FAN SCHEDULE

TAG	LOCATION	DESCRIPTION	WEIGHT (LBS)	FAN DATA				ELECTRICAL DATA			MODEL	NOTES
				DRIVE	TOTAL (CFM)	ESP (IN. W.G.)	HP	V/PH/HZ	MCA	MOCP		
CH-EF-004	CHEMICAL BUILDING ROOF	DOWNBLAST	70	BELT	2090	0.25	1/4	115/1/60	9	15	TWIN CITY FANS 18FA2B	1, 2, 3, 4.
CH-EF-005	CHEMICAL BUILDING ROOF	DOWNBLAST	70	BELT	2090	0.25	1/4	115/1/60	9	15	TWIN CITY FANS 18FA2B	1, 2, 3, 4.
SH-EF-008	SH BUILDING WALL	UPBLAST	90	DIRECT	1500	0.125	1/3	115/1/60	9	15	GREENHECK CW-161HP-B	1, 2.

NOTES:

1. REPLACEMENT OF EXISTING EXHAUST FAN.
2. FURNISH WITH BACKDRAFT DAMPER AND BIRD SCREENS.
3. PROVIDE CURB ADAPTER ENLARGER, "COMPLETE CURB PRODUCTS", CCP-CHE. ENLARGER TRANSITION FROM 26" TO 29.5".
4. FIBERGLASS FAN.

SALT SYSTEM DUST COLLECTION SCHEDULE

TAG	LOCATION	NOMINAL AIRFLOW (CFM)	INLET SIZE (IN)	MOTOR (HP)	ELECTRICAL DATA		UNIT WEIGHT (LBS)	MANUFACTURER	MODEL	NOTES
					VOLTAGE/PH/HZ	CURRENT AMPS				
SH-SSDC-001	SH BUILDING	2,000	8	3	230/1/60	14.5	800	DONALDSON TORIT	CPC-3	1, 2, 3, 4
SH-SSDC-002	SH BUILDING	2,000	8	3	230/1/60	14.5	800	DONALDSON TORIT	CPC-3	1, 2, 3, 4

NOTES:

1. PROVIDE UNIT WITH SINGLE POINT ELECTRICAL CONNECTION. DIVISION 26 TO PROVIDE EXTERNAL DISCONNECT.
2. UNIT TO REQUIRED 10 SCFM @ 90-100 PSI COMPRESSED AIR TO BE SERVED FROM EXISTING BUILDING SYSTEM, REFERENCE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
3. PROVIDE WITH NEMA 4X 316 STAINLESS STEEL CONTROL BOX TO INCLUDE CONTROL PANEL WITH DISCONNECT MOTOR STARTER AND DIGITAL GAUGE WITH DIFFERENTIAL PRESSURE CONTROL.
4. INCLUDE WITH 55 GAL. DRUM PACK WITHOUT SLIDE GATE.

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MECHANICAL SCHEDULES

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HR	BH
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M-601
SHEET NUMBER

SYMBOLS

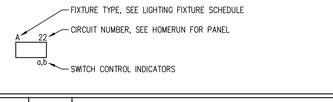
POWER

STANDARD	WALL	ON EMERG. POWER	ABOVE COUNTER	FLOOR	CEILING	DESCRIPTION
						SINGLE RECEPTACLE
						DUPLEX RECEPTACLE
						DOUBLE DUPLEX RECEPTACLE
	WP					NEMA 5-20R DUPLEX RECEPTACLE WITH WEATHERPROOF COVER
	A					SPECIALTY OUTLET AND TYPE
A						POWER POLE, OUTLETS ON SIDES OF EXTENDED LINES (A-INDICATES TYPE, SEE SPECIFICATIONS)
A						ELECTRICAL CONNECTION AND TYPE, SEE APPROVED EQUIPMENT SUBMITTAL
						MULTIOUTLET ASSEMBLY
						JUNCTION BOX
J						NON-FUSED DISCONNECT SWITCH
J						FUSED DISCONNECT SWITCH
J						COMBINATION STARTER
M						SINGLE POLE, TOGGLE TYPE, MOTOR RATED SWITCH
						SURFACE MOUNTED PANELBOARD
						FLUSH MOUNTED PANELBOARD
T						DRY TYPE TRANSFORMER
						BUSWAY (IN PLAN)
						PRE-FABRICATED GROUND BUS BAR
10						MOTOR-10 INDICATES HORSEPOWER
VFC						VARIABLE FREQUENCY CONTROLLER, SEE SCHEDULE
F/SD						FIRE/SMOKE DAMPER

LIGHTING

NOTE: SEE LIGHTING FIXTURE SCHEDULE FOR DETAILED INFORMATION.

LIGHTING CIRCUITING LEGEND



STANDARD	CEILING	WALL	ON ESSENT. POWER	DESCRIPTION
				FLUORESCENT FIXTURE
				MULTI-HEAD BATTERY PACK
				WALL MOUNTED FIXTURE
				CEILING MOUNTED DOWNLIGHT
				LINEAR/STRIP LUMINAIRE
				WALL WASHER (LIGHT DIRECTED TO RIGHT AS SHOWN)
				SINGLE FACE EXIT SIGN
				DUAL FACE EXIT SIGN
				SPECIAL WORDING ILLUMINATED SIGN
				POLE MOUNTED FIXTURE (NUMBER OF LUMINAIRES AS INDICATED)
				BOLLARD
		$		SINGLE POLE SWITCH
		$3		3-WAY SWITCH
		$4		4-WAY SWITCH
		$D		DIMMER SWITCH
		$P		SWITCH WITH PILOT LIGHT
		$K		KEY OPERATED SWITCH
		$L		LOW VOLTAGE SWITCH
	B	B		OCCUPANCY SENSOR SWITCH (B-INDICATES TYPE, ARROWS INDICATE COVERAGE)
RPC				LIGHTING CONTROL POWER RELAY (C-INDICATES TYPE)
PC				PHOTO ELECTRIC SWITCH

CIRCUITING

STANDARD	DESCRIPTION
	CIRCUIT HOMERUN; TICK MARKS INDICATE CONDUCTORS
	HOT
	NEUTRAL
	SWITCH LEG
	GROUND
#8/#8/#12	HOME RUN CALL-OUT PHASE/NEUTRAL/GROUNDING
#8/#12	HOME RUN CALL-OUT PHASE/GROUNDING

ONE-LINE SYMBOLS

STANDARD	DESCRIPTION
	POINT OF CONNECTION
	CIRCUIT BREAKER
	DRAWOUT CIRCUIT BREAKER
	INSULATED CASE SWITCH
NC	CONTACT - POWERED OPEN
NO	CONTACT - POWERED CLOSED
	CAPACITOR
	SWITCH
	POWER TRANSFORMER
	CT
	PT
	GROUND
	TRANSFER SWITCH
	BUSWAY
EM	ELECTRONIC MULTIFUNCTION METER
	FUSE
HP	MOTOR, HP - INDICATES HORSEPOWER
ST	SHUNT TRIP
KK	KIRK KEY INTERLOCK
SS	TRANSIENT VOLTAGE SURGE SUPPRESSION UNIT
PF	POWER FACTOR CORRECTION CAPACITOR
GF	GROUND FAULT
A30	FEEDER SIZE, SEE FEEDER SCHEDULE
PMA	POWER METER, SEE SCHEDULE

COMMUNICATIONS

WALL	ABOVE COUNTER	FLOOR	CEILING	DESCRIPTION
				TELEPHONE/DATA/COMM OUTLET
				HANDSET TELEPHONE OUTLET
IC				INTERCOM OUTLET
				CLOCK
			S	PAGING SPEAKER
V				SPEAKER VOLUME CONTROL
PB				PUSH BUTTON

FIRE ALARM

WALL	CEILING	DESCRIPTION
F		F.A. MANUAL PULL STATION
F		F.A. AUDIBLE/VISUAL STATION
F		F.A. AUDIBLE/VISUAL WITH CHIME
F V		F.A. VISUAL ONLY
		SMOKE DETECTOR
	D	DUCT SMOKE DETECTOR
	H	HEAT DETECTOR
	B	BELL
FACP		FIRE ALARM CONTROL PANEL
FARA		FIRE ALARM REMOTE ANNUNCIATOR
FS		SPRINKLER FLOW SWITCH
VS		VALVE SUPERVISORY SWITCH
		MAGNETIC DOOR HOLDER
PS		PRESSURE SWITCH
AR		ADDRESSABLE RELAY INTERFACE
IM		INPUT MODULE INTERFACE
FX		FIREMAN'S 2-WAY COMMUNICATION DEVICE
	S	DEDICATED FIRE ALARM SPEAKER

SECURITY

WALL	CEILING	DESCRIPTION
CR		ACCESS CONTROL, CARD READER
PB		PUSH BUTTON, PANIC BUTTON
		SECURITY CAMERA

MISCELLANEOUS SYMBOLS

STANDARD	DESCRIPTION
1	KEYED NOTE
1	REVISION TRIANGLE

SPECIAL RECEPTACLES

LETTER	RATING	NEMA	NOTES
A	125V, 1ø, 30A, 2P, 3W	5-30R	WITH 5-30P PLUG
B	250V, 1ø, 20A, 2P, 3W	6-20R	WITH 6-20P PLUG
C	250V, 1ø, 30A, 2P, 3W	6-30R	WITH 6-30P PLUG
D	250V, 1ø, 50A, 2P, 3W	6-50R	WITH 6-50P PLUG
F	125/250V, 1ø, 20A, 3P, 4W	14-20R	WITH 14-20P PLUG
G	125V, 1ø, 20A,2P,3W DUPLEX	5-20R	GROUND FAULT INTERRUPTING MOUNTED AT +42" U.O.N.
H	125/250V, 1ø, 30A, 3P, 4W	14-30R	WITH 14-30P PLUG
IG	125V, 1ø, 20A, 2P, 3W	5-20R	ISOLATED GROUND W/ INTEGRAL TRANSIENT VOLT. SUPPRESSOR
L	125V, 1ø, 20A, 2P, 3W LOCKING	L5-20R	WITH L5-20P PLUG
LA	125V, 1ø, 30A, 2P, 3W	L5-30R	WITH L5-30P PLUG
M	250V, 3ø, 20A, 3P, 4W	15-20R	WITH 15-20P PLUG
N	250V, 3ø, 30A, 3P, 4W	15-30R	WITH 15-30P PLUG
P	250V, 3ø, 50A, 3P, 4W	15-50R	WITH 15-50P PLUG
R	250V, 3ø, 60A, 3P, 4W	15-60R	WITH 15-60P PLUG
S	125V, 1ø, 20A, 2P, 3W	5-20R	"SAFETY TYPE" RECEPTACLE
W	480V, 3ø, 60A, 3P, 4W	IEC 309-1&2 (NOT NEMA)	PIN & SLEEVE ON 15° ANGLE BACK BOX W/ MATCHING PLUG
WP	125V.,1PH, 20A, 2P, 3W DUPLEX	5-20R	WITH WEATHERPROOF COVER AND GROUND FAULT INTERRUPTING

NOTES:

1. THE NEMA NUMBER WITH THE "L" PREFIX INDICATES THE LOCKING TYPE RECEPTACLE AND PLUG.
2. THE NUMBER OF WIRES INDICATED INCLUDES THE GROUND.

MOUNTING HEIGHTS

UNLESS OTHERWISE INDICATED ON PLANS, DEVICES SHALL BE MOUNTED AT THE FOLLOWING HEIGHTS (MEASURED FROM FINISHED FLOOR TO CENTER OF DEVICE.)

DEVICE	HEIGHT
RECEPTACLE	+18"
LIGHT SWITCHES	+44"
PULL STATIONS	+44"
TELEPHONE WALL MOUNTED HANDSET	+44"
TELEPHONE/DATA/COMM.	+18"
CLOCK	+90"
TV SIGNAL/POWER	TBD FOR EACH PROJECT/LOCATION

GENERAL NOTES:

1. MOUNT ALL DEVICES AT HEIGHT INDICATED UNLESS NOTED OTHERWISE ON ELECTRICAL PLANS OR ON ARCHITECTURAL INTERIOR ELEVATIONS.
2. ALL DIMENSIONS ARE TO THE CENTER LINE OF THE DEVICE UNLESS NOTED OTHERWISE.
3. NEW WORK IS REPRESENTED ON THE DRAWINGS IN BOLD PRINT, AND EXISTING EQUIPMENT IS REPRESENTED IN LIGHT (GRAY) PRINT. ON DEMOLITION DRAWINGS ITEMS IN BOLD ARE TO BE DEMOLISHED UNLESS NOTED OTHERWISE.
4. / INDICATES DEVICE IS MOUNTED 6" ABOVE COUNTERTOP BACK SPLASH.
5. NOT ALL SYMBOLS SHOWN ON THIS SHEET ARE USED IN THE DRAWINGS.

ABBREVIATIONS

ABBREV.	DESCRIPTION
A	AMPERE
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AIC	AMP INTERRUPTING CAPACITY
AL	ALUMINUM
ANN	ANNUNCIATOR
ARF	ABOVE RAISED FLOOR
AS	AMMETER SWITCH
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
ATX	AUTO TRANSFORMER
B	BELL
BC	BARE COPPER
BLDG	BUILDING
BOC	BOTTOM OF CONDUIT
BOD	BOTTOM OF DUCT
BOT	BOTTOM OF TRAY
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CO	CONDUIT ONLY
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CRS	COATED RIGID STEEL CONDUIT
CRWP	CLEANROOM WALL PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
DIA	DIAMETER
DC	DIRECT CURRENT
DIV	DIVISION
(E)	EXISTING
EG	ENGINE GENERATOR
EM	EMERGENCY
EPO	EMERGENCY POWER OFF
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NON-METALLIC TUBING
EOL	END-OF-LINE DEVICE
EWC	ELECTRIC WATER COOLER
(F)	FUTURE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OWNER, INSTALLED BY CONTRACTOR
FLR	FLOOR
FMC	FLEXIBLE METALLIC CONDUIT
FNC	FLEXIBLE NONMETALLIC CONDUIT
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
G	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFR	GROUND FAULT RELAY
GSM	GAS SAFETY MONITOR
H	HORN
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HT	HEIGHT
ICCB	INSULATED CASE CIRCUIT BREAKER
IG	ISOLATED GROUND
IMC	INTERMEDIATE METALLIC CONDUIT
I/O	INPUT/OUTPUT
IT	INFORMATION TECHNOLOGY
J	JUNCTION BOX
KK	KIRK-KEY INTERLOCK
KA	KILOAMPERE
KVA	KILOVOLT-AMPERE
KVAR	KILOVOLT-AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR
KX	KNOX BOX
L	LONG
LAN	LOCAL AREA NETWORK
LC	LIGHTING CONTACTOR
LFMC	LIQUIDTIGHT FMC
LFNC	LIQUIDTIGHT FNC
LSI	LONG TIME, SHORT TIME, INSTANTANEOUS TRIP
LSIG	LSI PLUS GROUND FAULT
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MCP	MOTOR CIRCUIT PROTECTOR
MFR	MANUFACTURER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTIVE DEVICE
MTD	MOUNTED
MTG	MOUNTING

ABBREV.	DESCRIPTION
(N)	NEW
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NON-FUSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NP	NAMEPLATE
NTS	NOT TO SCALE
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OL	OVERLOAD RELAY
PA	PUBLIC ADDRESS
PB	PUSHBUTTON
PC	PHOTOCELL
PIV	POST INDICATOR VALVE
PL	PILOT LIGHT
PNL	PANEL
PVC	POLYVINYL CHLORIDE
ø,PH	PHASE
QTY	QUANTITY
(R)	RELOCATED
RM	ROOM
RNC	RIGID NON-METALLIC CONDUIT
RQD	REQUIRED
RGS	RIGID GALVANIZED STEEL CONDUIT
RVNR	REDUCED VOLTAGE NON-REVERSING
RVR	REDUCED VOLTAGE REVERSING
SCADA	SUPERVISORY CONTROL & DATA ACQUISITION
SCP	SECURITY CONTROL PANEL
SFEP	SMOKE/FUME EXHAUST PANEL
SQ	SQUARE
SS	STAINLESS STEEL
SURF	SURFACE
SW	SWITCH
SWBD	SWITCHBOARD, UL 891
SWGR	SWITCHGEAR, UL 1558
SYM	SYMMETRICAL
TB	TERMINAL BLOCK
TBD	TO BE DETERMINED
TDR	TIME DELAY RELAY
TS	TAMPER SWITCH
TSTAT	THERMOSTAT
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
V	VOLTMETER, VOLT
VA	VOLT-AMPERE
VAR	VOLT-AMPERE REACTIVE
VFC	VARIABLE FREQUENCY CONTROLLER
VP	VAPORPROOF
W	WATT, WIRE, WIDE
WCR	WITHSTAND/CLOSING RATING
WHD	WATTHOUR DEMAND METER
WP	WEATHER PROTECTED
X	EXPLOSION CLASS & GROUP AS NOTED
(X)	EXISTING TO BE RELOCATED
XFMR	TRANSFORMER
Y	WYE CONNECTED
Y-Δ	WYE-DELTA
Z	IMPEDANCE

Page/

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

Firm Registration No. 15868
Page Southerland Page, Inc

ELECTRICAL
SYMBOLS & ABBREVIATIONS

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

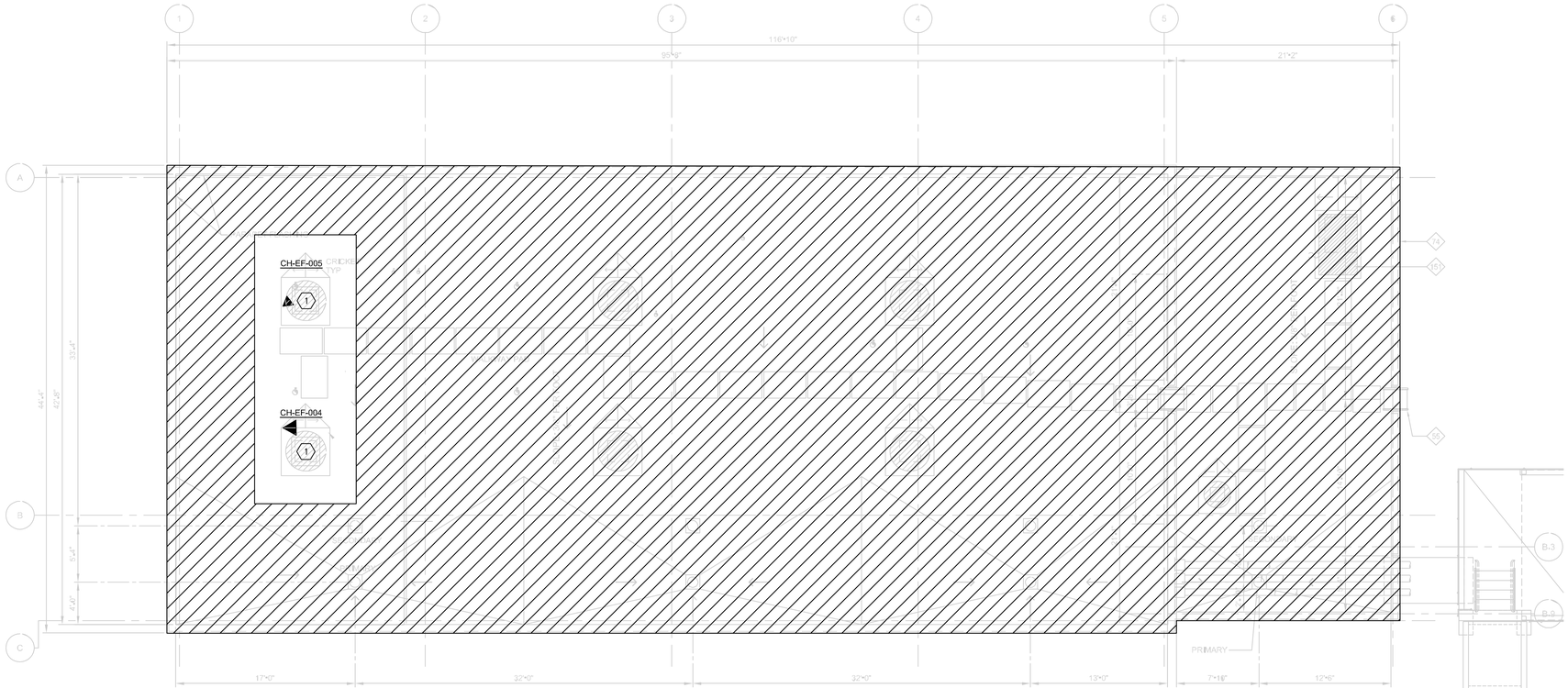
E-001
SHEET NUMBER

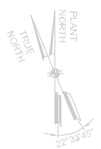
GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-80-AC3, DATED MAY 2011.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING ELECTRICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH SITE TEMPORARY PANEL SHUTDOWN PRIOR TO COMMENCING DEMOLITION WORK.
4. EQUIPMENT SHOWN IN BOLD AND DASHED IS TO BE DEMOLISHED. HATCHED AREAS ARE NOT IN SCOPE OF WORK.
5. CONTRACTOR TO PERFORM EQUIPMENT GROUNDING AND BONDING PER SPECIFICATIONS. REFER TO SPECIFICATIONS SECTION 16550 FOR GENERAL EQUIPMENT GROUNDING, ERECTION, INSTALLATION, AND APPLICATION INSTRUCTIONS.
6. CONTRACTOR IS RESPONSIBLE TO EVALUATE EXISTING LIGHTNING PROTECTION SYSTEM TO MAKE SURE ANY NEW EQUIPMENT INSTALLED IS PROTECTED. COORDINATE INSTALLATION OF LIGHTNING PROTECTION WITH INSTALLATION OF OTHER BUILDING SYSTEMS AND COMPONENTS. REFER TO SPECIFICATIONS SECTION 16670 FOR GENERAL LIGHTNING PROTECTION SYSTEM REQUIREMENTS.

KEYED NOTES

1. CONTRACTOR TO DEMOLISH EXHAUST FAN WIRING BACK TO PANEL. CONTRACTOR TO KEEP EXISTING CONDUITS AND RACEWAY FOR REUSE. REFER TO SHEET CB-E-102 FOR LOCATION OF ELECTRICAL PANEL.





1 CHEMICAL BUILDING
ROOF LEVEL
ELECTRICAL DEMOLITION PLAN
SCALE: 3/16"=1'-0"

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR DEVELOPMENT	19 MAR 2021

PROFESSIONAL SEALS

Firm Registration No. 15868
Page Southerland Page, Inc.

STATE OF TEXAS
CAMERON E. BROWN
105037
LICENSED PROFESSIONAL ENGINEER
3/19/2021

CHEMICAL BUILDING
ROOF LEVEL
ELECTRICAL DEMOLITION PLAN

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

CB-E-101D
SHEET NUMBER

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-80-AC3, DATED MAY 2011.
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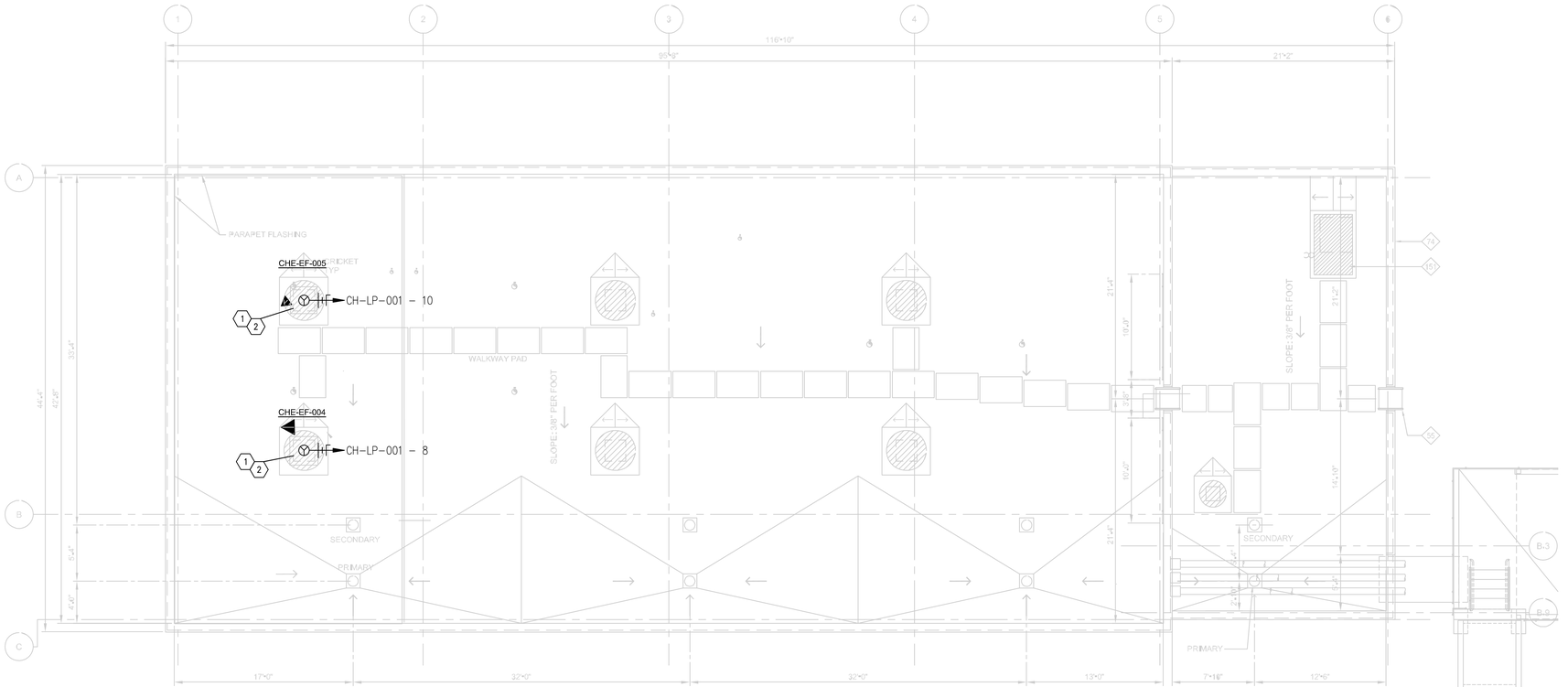
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.
4. CONTRACTOR TO PERFORM EQUIPMENT GROUNDING AND BONDING PER SPECIFICATIONS. REFER TO SPECIFICATIONS SECTION 16550 FOR GENERAL EQUIPMENT GROUNDING, ERECTION, INSTALLATION, AND APPLICATION INSTRUCTIONS.
5. CONTRACTOR IS RESPONSIBLE TO EVALUATE EXISTING LIGHTNING PROTECTION SYSTEM TO MAKE SURE ANY NEW EQUIPMENT INSTALLED IS PROTECTED. COORDINATE INSTALLATION OF LIGHTNING PROTECTION WITH INSTALLATION OF OTHER BUILDING SYSTEMS AND COMPONENTS. REFER TO SPECIFICATIONS SECTION 16670 FOR GENERAL LIGHTNING PROTECTION SYSTEM REQUIREMENTS.

KEYED NOTES

1. CONTRACTOR TO PROVIDE NEW CONDUCTORS FOR EXHAUST FAN. REFER TO SHEET E-621 FOR CONDUCTOR SIZE DESIGNATION. REFER TO SHEET E-622 FOR WIRING SIZE AND QUANTITY.
2. CONTRACTOR TO REUSE EXISTING CONDUITS AND RACEWAY TO ROUTE NEW WIRING.



1 CHEMICAL BUILDING ROOF LEVEL ELECTRICAL PLAN

SCALE: 3/16"=1'-0"

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

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STATE OF TEXAS
CAMERON E. BROWN
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3/19/2021

CHEMICAL BUILDING
ROOF LEVEL
ELECTRICAL PLAN

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
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ORIGINAL ISSUE	DATE
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CB-E-101
SHEET NUMBER

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-80-H01, DATED MAY 2011.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING ELECTRICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.
4. CONTRACTOR TO PERFORM EQUIPMENT GROUNDING AND BONDING PER SPECIFICATIONS. REFER TO SPECIFICATIONS SECTION 16550 FOR GENERAL EQUIPMENT GROUNDING, ERECTION, INSTALLATION, AND APPLICATION INSTRUCTIONS.
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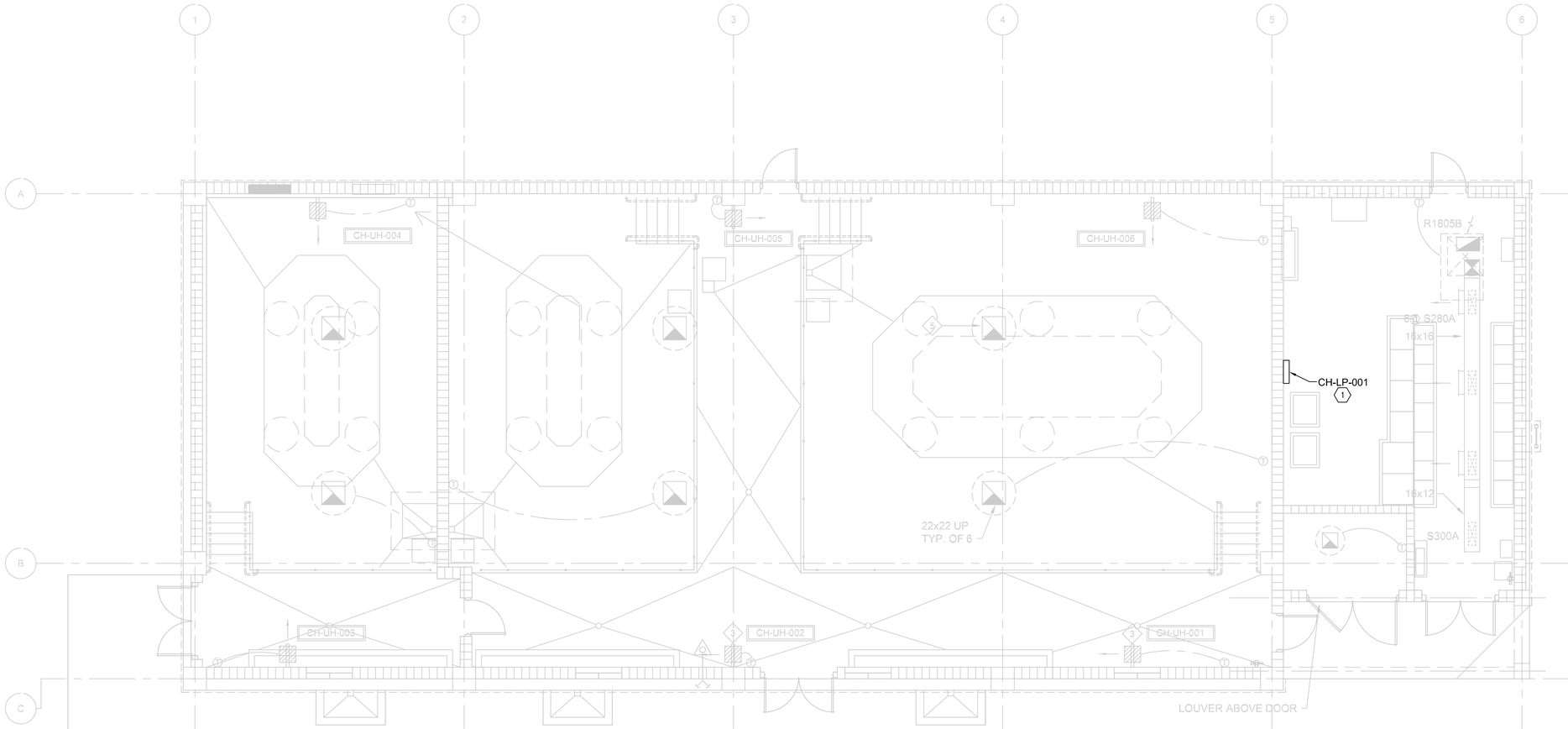
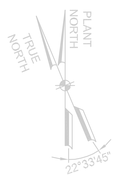
KEYED NOTES

(1) CONNECT NEW EXHAUST FANS CHE-EF-004 AND CHE-EF-005 TO PANEL. REFER TO PANEL SCHEDULES FOR BREAKER LOCATION.



CHEMICAL BUILDING
LOWER LEVEL
ELECTRICAL FLOOR PLAN
SCALE: 3/16"=1'-0"



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REVISION	DESCRIPTION	DATE
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0050337
LICENSED
PROFESSIONAL ENGINEER
3/19/2021

CHEMICAL BUILDING
LOWER LEVEL
ELECTRICAL FLOOR PLAN

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

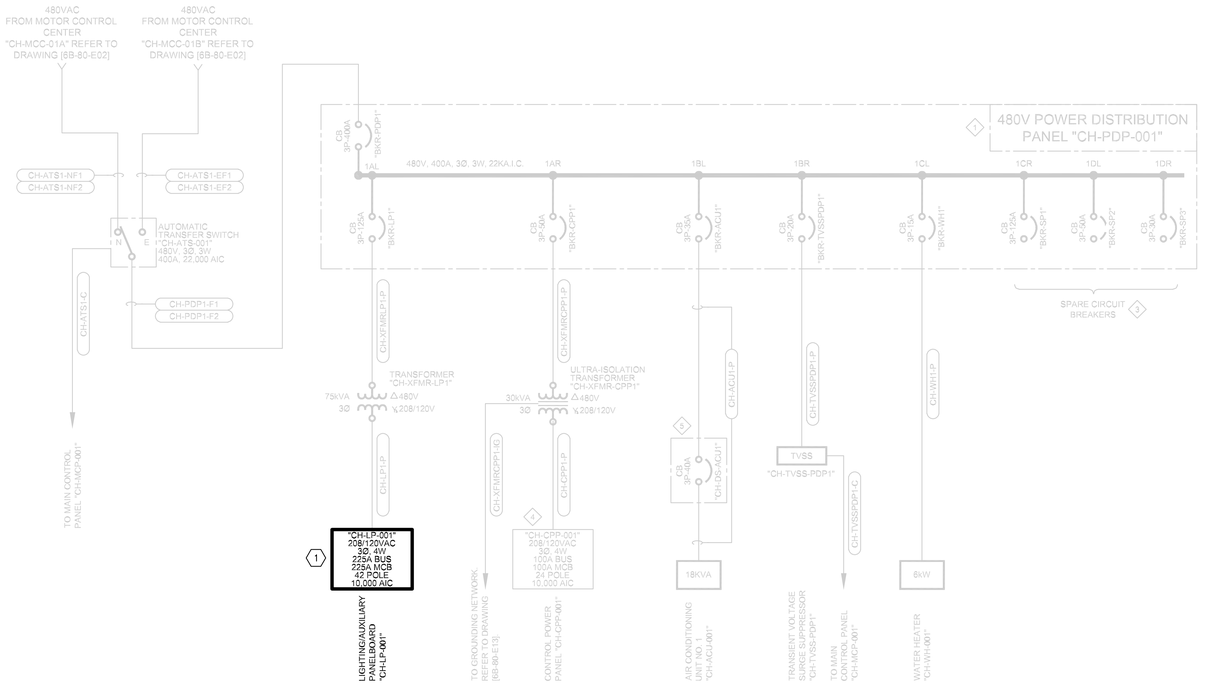
CB-E-102
SHEET NUMBER

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-80-503, DATED MAY 2011.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING ELECTRICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.
4. NEW CIRCUIT BREAKERS NEED TO MATCH THE EXISTING PANELBOARD MANUFACTURER AND KAIC RATING.

KEYED NOTES

1. NEW LOADS TO BE CONNECTED TO THIS PANEL. REFER TO SHEET CB-E-101 FOR LOAD LOCATIONS. REFER TO SHEET E-631 FOR BREAKER SIZE AND LOCATION.



CH-LP-001				
LOAD TYPE	DEMAND LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	NOTES
EXISTING	38.414	1.25	48.0175	EXISTING PANELBOARD DEMAND LOAD BASED ON ORIGINAL PANELBOARD
NEW	1.392	1	1.392	DESIGN LOADS
		TOTAL (KVA)	49.4	PER NEC 220.87.2 THE NEW LOAD PLUS THE TOTAL DEMAND DOES NOT EXCEED THE AMPACITY OF THE FEEDER OR RATING OF THE SERVICE
		TOTAL (A)	137.1	
		CAPACITY (A)	225.0	NEW TOTAL LOAD REPRESENTS 76.2% OF TOTAL ALLOWABLE LOAD

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

Firm Registration No. 15662
Page Southerland Page, Inc.

STATE OF TEXAS
CAMERON E. BROWN
005037
LICENSED
PROFESSIONAL ENGINEER
3/19/2021

ELECTRICAL ONE-LINE DIAGRAM
CHEMICAL BUILDING

DRAWN BY: SJK	CHECKED BY: JJM
PROJECT NUMBER: 119401	PROJECT ABBREVIATION: COA HWTP
ORIGINAL ISSUE: IFC	DATE: 19 MAR 2021

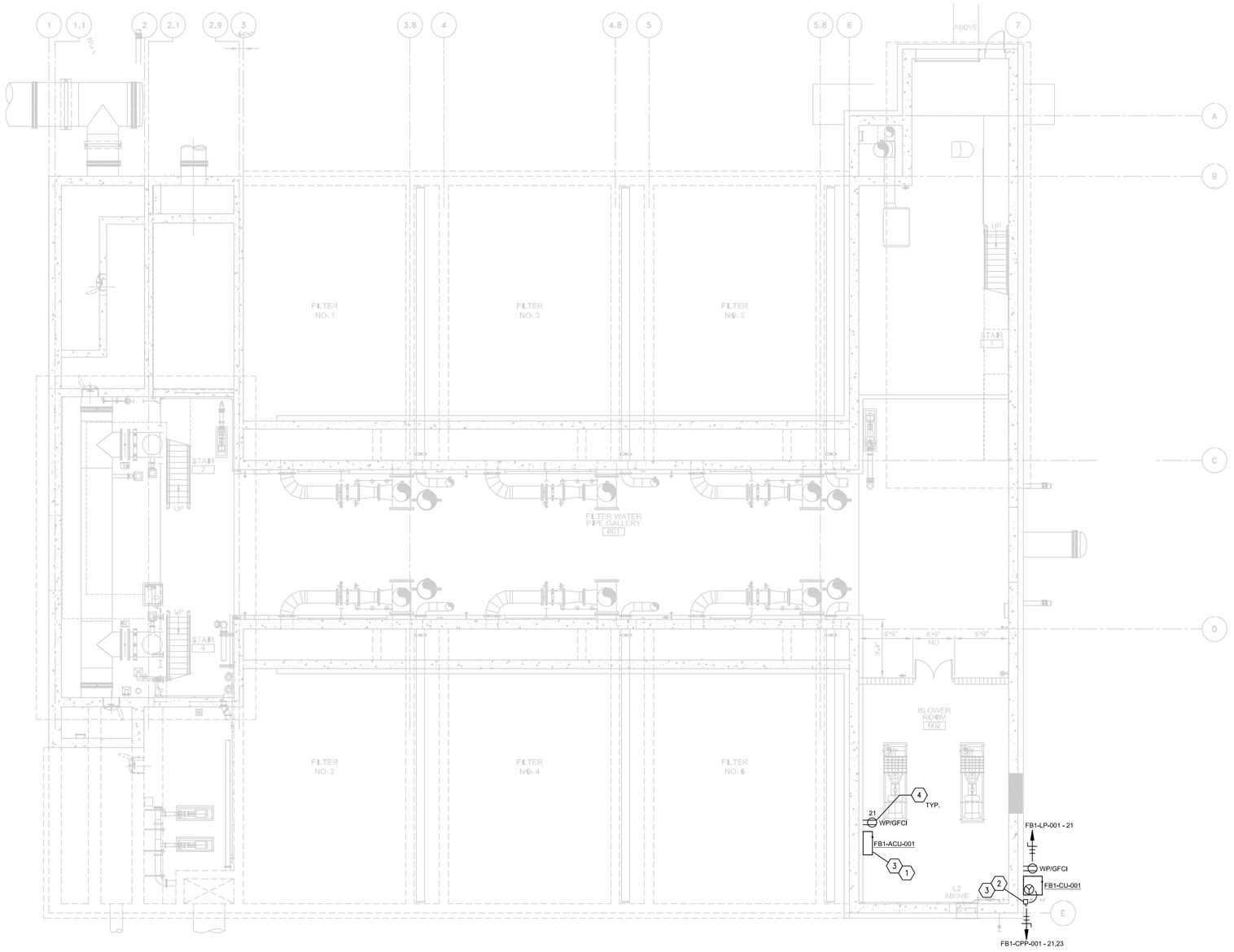
CB-E-601
SHEET NUMBER

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-50-A02, DATED MAY 2011.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING ELECTRICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.
4. CONTRACTOR TO PERFORM EQUIPMENT GROUNDING AND BONDING PER SPECIFICATIONS. REFER TO SPECIFICATIONS SECTION 16550 FOR GENERAL EQUIPMENT GROUNDING, ERECTION, INSTALLATION, AND APPLICATION INSTRUCTIONS.
5. CONTRACTOR IS RESPONSIBLE TO EVALUATE EXISTING LIGHTNING PROTECTION SYSTEM TO MAKE SURE ANY NEW EQUIPMENT INSTALLED IS PROTECTED. COORDINATE INSTALLATION OF LIGHTNING PROTECTION WITH INSTALLATION OF OTHER BUILDING SYSTEMS AND COMPONENTS. REFER TO SPECIFICATIONS SECTION 16670 FOR GENERAL LIGHTNING PROTECTION SYSTEM REQUIREMENTS.

KEYED NOTES

1. CONTRACTOR TO COORDINATE WITH SITE AND EQUIPMENT INSTALLER THE ROUTING OF ELECTRICAL CONDUIT FOR THE INDOOR A/C UNIT.
2. CONTRACTOR TO PROVIDE SINGLE THROW SAFETY DISCONNECT SWITCH, NEMA 4X 316 SS, 30A, 240VAC, 2P.
3. CONTRACTOR TO COORDINATE WITH SITE AND EQUIPMENT INSTALLER CONDUIT/WIRE ENTRANCE LOCATIONS PRIOR TO COMMENCING WITH INSTALLATION OF CONDUIT/WIRE AND WALL PENETRATIONS. SEAL ALL PENETRATIONS IN ACCORDANCE WITH DETAILS AND SPECIFICATIONS. REFER TO SHEET E-501 FOR CONDUIT PENETRATION DETAIL.
4. GFCI CONVENIENCE RECEPTACLE WITH WATER PROOF COVER TO BE INSTALLED 36" AFF.



FILTER BUILDING
LOWER LEVEL
ELECTRICAL FLOOR PLAN

2 SCALE: 3/16"=1'-0"

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

Firm Registration No. 15662
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STATE OF TEXAS
CAMERON E. BROWN
105037
LICENSED
PROFESSIONAL ENGINEER
3/19/2021

FILTER BUILDING
LOWER LEVEL
ELECTRICAL FLOOR PLAN

DRAWN BY: SJK	CHECKED BY: JJM
PROJECT NUMBER: 119401	PROJECT ABBREVIATION: COA HWTP
ORIGINAL ISSUE: IFC	DATE: 19 MAR 2021

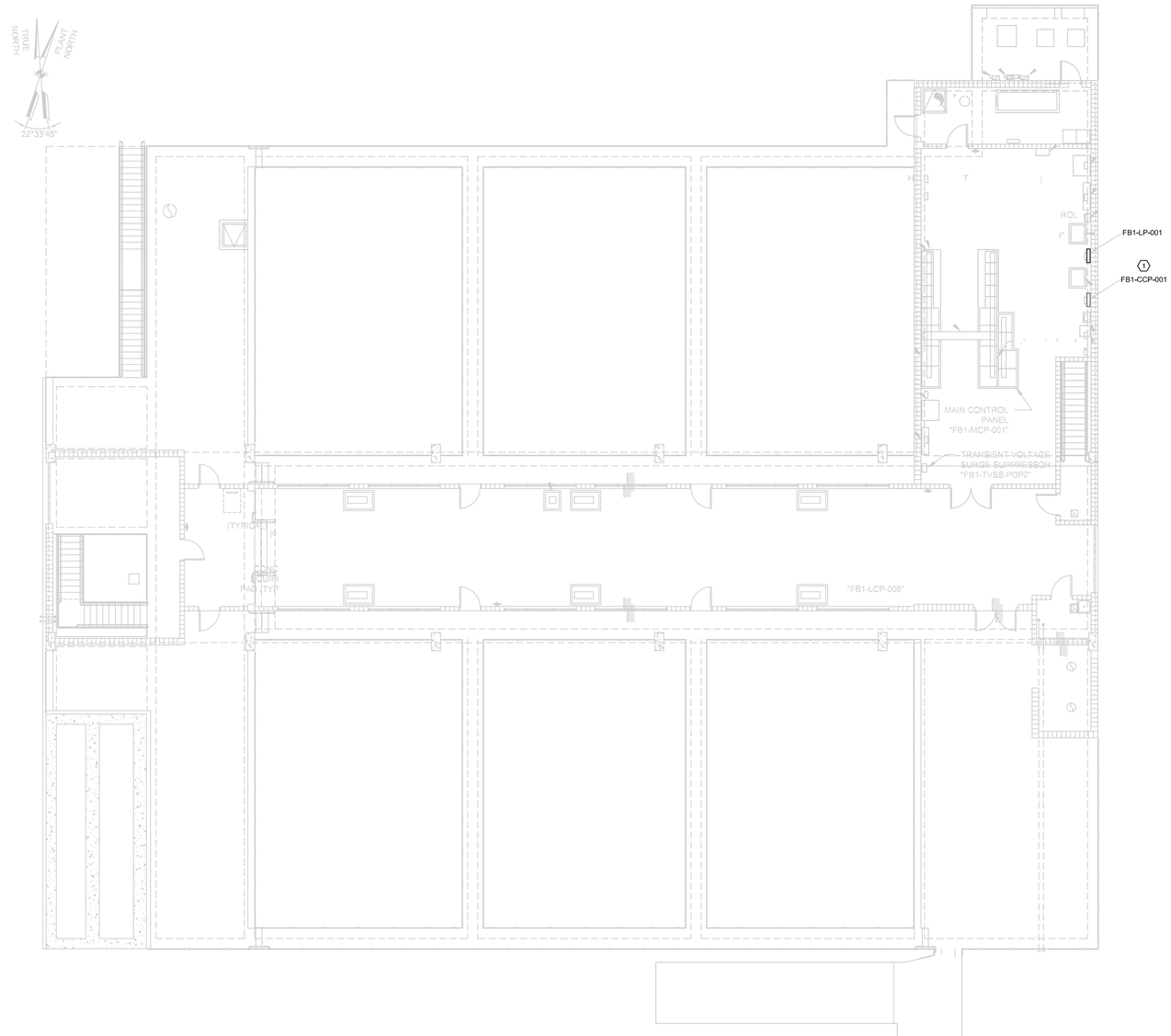
FB1-E-101
SHEET NUMBER

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-50-A00 DATED MAY 2011.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING ELECTRICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.
4. CONTRACTOR TO PERFORM EQUIPMENT GROUNDING AND BONDING PER SPECIFICATIONS. REFER TO SPECIFICATIONS SECTION 16550 FOR GENERAL EQUIPMENT GROUNDING, ERECTION, INSTALLATION, AND APPLICATION INSTRUCTIONS.
5. CONTRACTOR IS RESPONSIBLE TO EVALUATE EXISTING LIGHTNING PROTECTION SYSTEM TO MAKE SURE ANY NEW EQUIPMENT INSTALLED IS PROTECTED. COORDINATE INSTALLATION OF LIGHTNING PROTECTION WITH INSTALLATION OF OTHER BUILDING SYSTEMS AND COMPONENTS. REFER TO SPECIFICATIONS SECTION 16670 FOR GENERAL LIGHTNING PROTECTION SYSTEM REQUIREMENTS.

KEYED NOTES

(1) CONNECT SPLIT HVAC UNIT FB1-CU-001/FB1-ACU-001 TO THIS PANEL. REFER TO SHEET E-631 FOR BREAKER POSITION AND SIZE.



1 FILTER BUILDING
GROUND LEVEL
ELECTRICAL FLOOR PLAN
SCALE: 3/16"=1'-0"

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

Firm Registration No. 15662
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STATE OF TEXAS
CAMERON E. BROWN
105537
LICENSED
PROFESSIONAL ENGINEER
3/19/2021

FILTER BUILDING
GROUND LEVEL
ELECTRICAL FLOOR PLAN

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

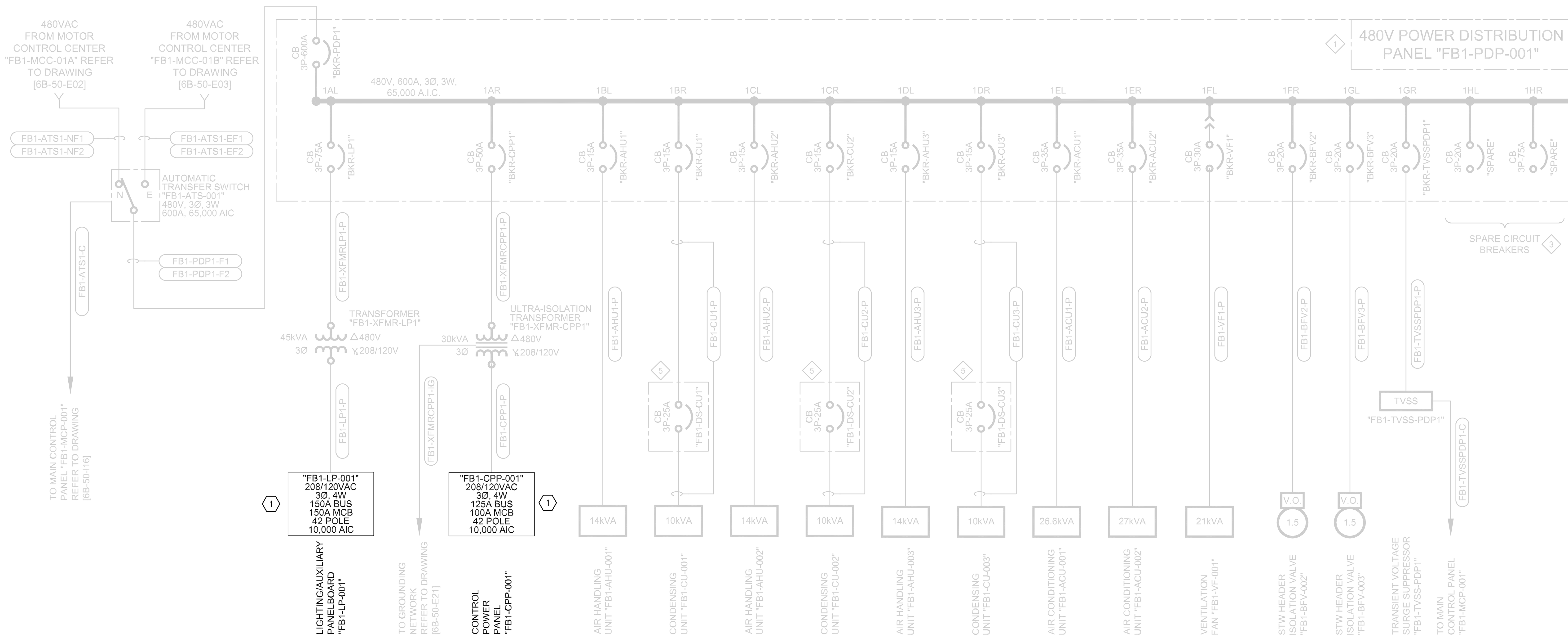
FB1-E-102
SHEET NUMBER

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-50-E04, DATED MAY 2011.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING ELECTRICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.
4. NEW CIRCUIT BREAKERS NEED TO MATCH THE EXISTING PANELBOARD MANUFACTURER AND KAIC RATING.

KEYED NOTES

1. NEW LOADS TO BE CONNECTED TO THIS PANEL. REFER TO DRAWING FB1-E-101 FOR LOAD LOCATIONS. REFER TO SHEET E-631 FOR BREAKER SIZE AND LOCATIONS.



FB1-CPP-001

LOAD TYPE	DEMAND LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	NOTES
EXISTING	9.709	1.25	12.13625	EXISTING PANELBOARD DEMAND LOAD BASED ON ORIGINAL PANELBOARD DESIGN LOADS
NEW	1.991	1	1.991	
		TOTAL (KVA)	14.12725	PER NEC 220.87.2 THE NEW LOAD PLUS THE TOTAL DEMAND DOES NOT EXCEED THE AMPACITY OF THE FEEDER OR RATING OF THE SERVICE
		TOTAL (A)	39.2	
		CAPACITY (A)	100.0	NEW TOTAL LOAD REPRESENTS 49.02% OF TOTAL ALLOWABLE LOAD

FB1-LP-001

LOAD TYPE	DEMAND LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	NOTES
EXISTING	31.375	1.25	39.21875	EXISTING PANELBOARD DEMAND LOAD BASED ON ORIGINAL PANELBOARD DESIGN LOADS
NEW	0.36	1	0.36	
		TOTAL (KVA)	39.6	PER NEC 220.87.2 THE NEW LOAD PLUS THE TOTAL DEMAND DOES NOT EXCEED THE AMPACITY OF THE FEEDER OR RATING OF THE SERVICE
		TOTAL (A)	109.9	
		CAPACITY (A)	150.0	NEW TOTAL LOAD REPRESENTS 91.55% OF TOTAL ALLOWABLE LOAD

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

Firm Registration No. 15868 Page Southerland Page, Inc.

STATE OF TEXAS
CAMERON E. BROWN
0050337
LICENSED
PROFESSIONAL ENGINEER

[illegible] 3/19/2021

ELECTRICAL ONE-LINE DIAGRAM
FILTER BUILDING

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

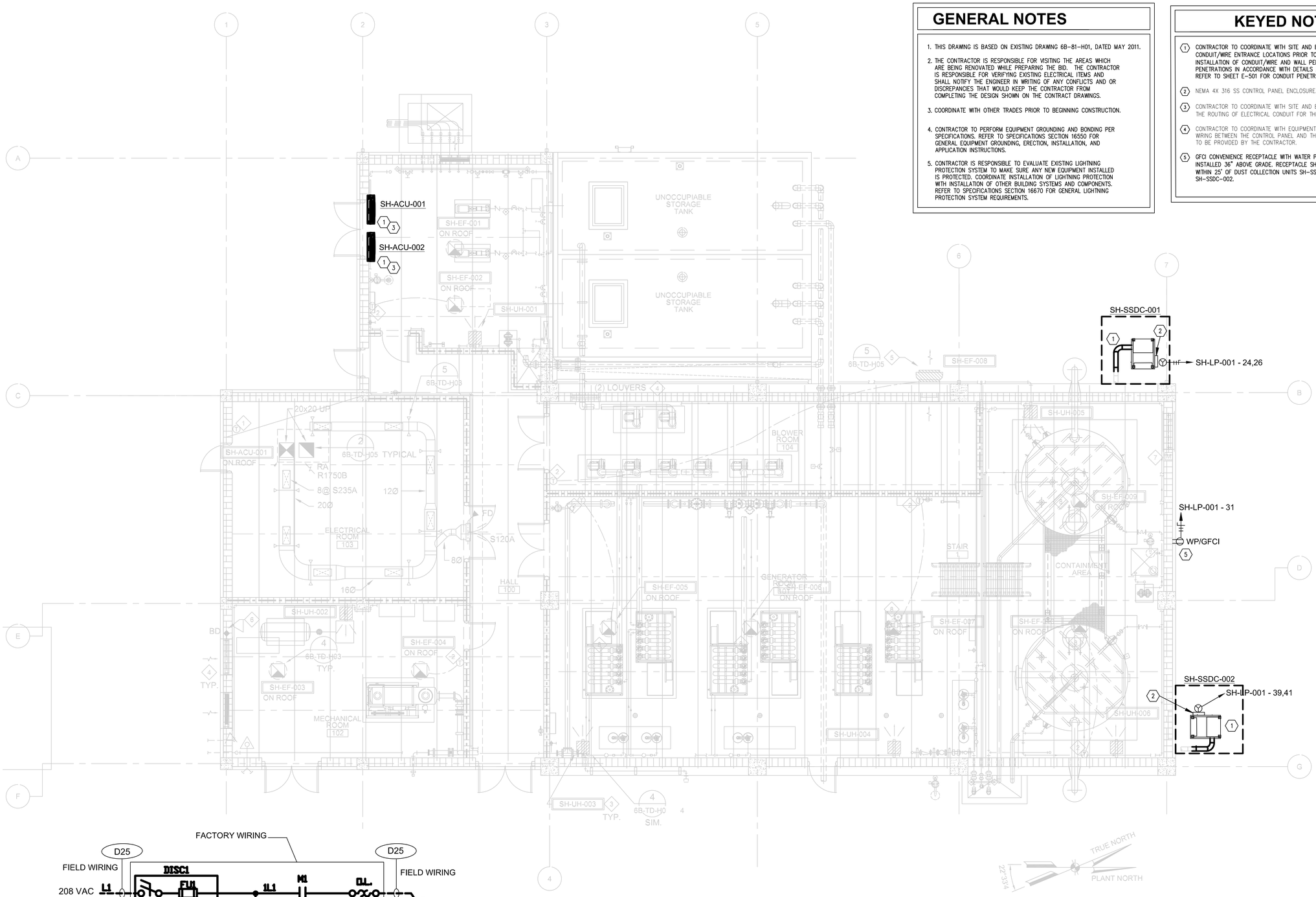
FB1-E-601
SHEET NUMBER

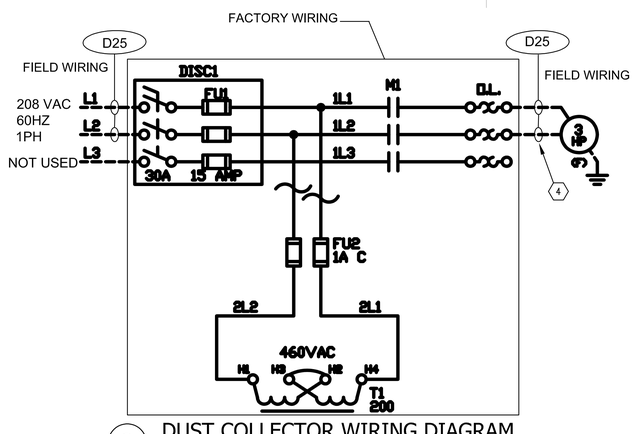
GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-81-H01, DATED MAY 2011.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING ELECTRICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.
4. CONTRACTOR TO PERFORM EQUIPMENT GROUNDING AND BONDING PER SPECIFICATIONS. REFER TO SPECIFICATIONS SECTION 16550 FOR GENERAL EQUIPMENT GROUNDING, ERECTION, INSTALLATION, AND APPLICATION INSTRUCTIONS.
5. CONTRACTOR IS RESPONSIBLE TO EVALUATE EXISTING LIGHTNING PROTECTION SYSTEM TO MAKE SURE ANY NEW EQUIPMENT INSTALLED IS PROTECTED. COORDINATE INSTALLATION OF LIGHTNING PROTECTION WITH INSTALLATION OF OTHER BUILDING SYSTEMS AND COMPONENTS. REFER TO SPECIFICATIONS SECTION 16670 FOR GENERAL LIGHTNING PROTECTION SYSTEM REQUIREMENTS.

KEYED NOTES

1. CONTRACTOR TO COORDINATE WITH SITE AND EQUIPMENT INSTALLER CONDUIT/WIRE ENTRANCE LOCATIONS PRIOR TO COMMENCING WITH INSTALLATION OF CONDUIT/WIRE AND WALL PENETRATIONS. SEE ALL PENETRATIONS IN ACCORDANCE WITH DETAILS AND SPECIFICATIONS. REFER TO SHEET E-501 FOR CONDUIT PENETRATION DETAIL.
2. NEMA 4X 316 SS CONTROL PANEL ENCLOSURE.
3. CONTRACTOR TO COORDINATE WITH SITE AND EQUIPMENT INSTALLER THE ROUTING OF ELECTRICAL CONDUIT FOR THE INDOOR A/C UNIT.
4. CONTRACTOR TO COORDINATE WITH EQUIPMENT MANUFACTURER FOR WIRING BETWEEN THE CONTROL PANEL AND THE SOLENOIDS. WIRING IS TO BE PROVIDED BY THE CONTRACTOR.
5. GFCI CONVENIENCE RECEPTACLE WITH WATER PROOF COVER TO BE INSTALLED 36" ABOVE GRADE. RECEPTACLE SHALL BE INSTALLED WITHIN 25' OF DUST COLLECTION UNITS SH-SSDC-001 AND SH-SSDC-002.





3 DUST COLLECTOR WIRING DIAGRAM
NTS

2 SH BUILDING GROUND LEVEL ELECTRICAL LEVEL FLOOR PLAN
SCALE: 3/16"=1'-0"

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

Firm Registration No. 15682
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CAMERON E. BROWN
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PROFESSIONAL ENGINEER
3/19/2021

SODIUM HYPOCHLORITE BUILDING
GROUND LEVEL
ELECTRICAL FLOOR PLAN

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

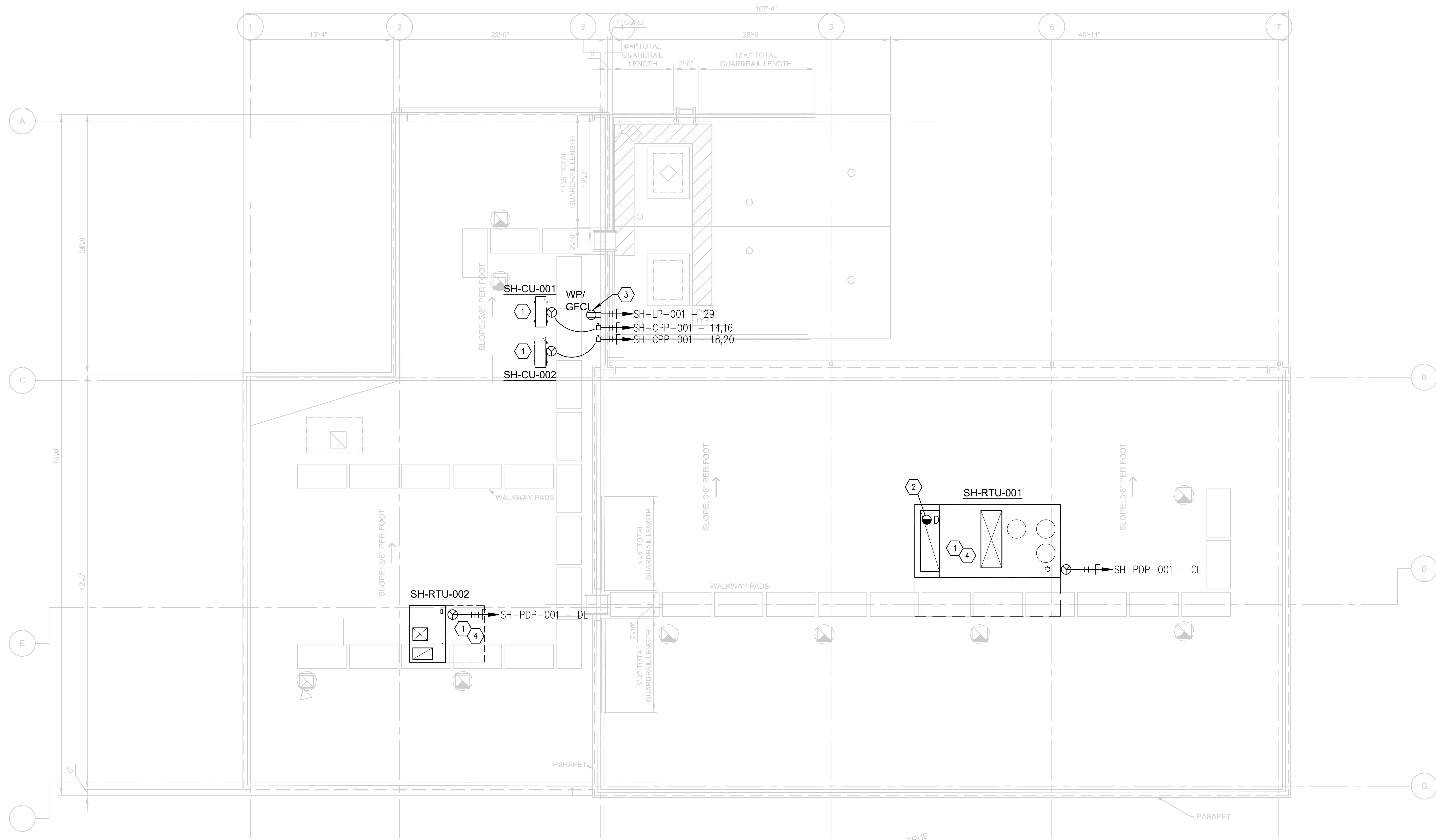
SH-E-101
SHEET NUMBER

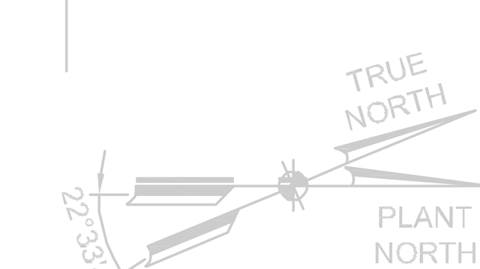
GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-81-A03, DATED MAY 2011.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING ELECTRICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.
4. CONTRACTOR TO PERFORM EQUIPMENT GROUNDING AND BONDING PER SPECIFICATIONS. REFER TO SPECIFICATIONS SECTION 16550 FOR GENERAL EQUIPMENT GROUNDING, ERECTION, INSTALLATION, AND APPLICATION INSTRUCTIONS.
5. CONTRACTOR IS RESPONSIBLE TO EVALUATE EXISTING LIGHTNING PROTECTION SYSTEM TO MAKE SURE ANY NEW EQUIPMENT INSTALLED IS PROTECTED. COORDINATE INSTALLATION OF LIGHTNING PROTECTION WITH INSTALLATION OF OTHER BUILDING SYSTEMS AND COMPONENTS. REFER TO SPECIFICATIONS SECTION 16670 FOR GENERAL LIGHTNING PROTECTION SYSTEM REQUIREMENTS.
6. DUCT SMOKE DETECTOR SHALL MATCH THE EXISTING SYSTEM EXACTLY. IN LIEU OF AN EXACT MATCH, PRODUCTS COMPATIBLE TO THE EXISTING SYSTEM WILL BE ACCEPTED ONLY WITH DOCUMENTATION FROM THE CONTROL SYSTEM MANUFACTURER'S AUTHORIZED REPRESENTATIVE, STATING COMPATIBILITY AS WELL AS UL CROSS LISTING. DETECTOR SHALL TRANSMIT SIGNAL TO BUILDING MECHANICAL SYSTEMS TO INITIATE SHUTDOWN OF FANS AND DAMPER OPERATION.

KEYED NOTES

1. CONTRACTOR TO COORDINATE WITH SITE AND EQUIPMENT INSTALLER CONDUIT/WIRE ENTRANCE LOCATIONS PRIOR TO COMMENCING WITH INSTALLATION OF CONDUIT/WIRE AND WALL PENETRATIONS. SEE ALL PENETRATIONS IN ACCORDANCE WITH DETAILS AND SPECIFICATIONS. REFER TO SHEET E-501 FOR CONDUIT PENETRATION DETAIL.
2. DUCT-MOUNTED SMOKE DETECTOR PROVIDED BY AIR HANDLING UNIT MANUFACTURER TO BE INTEGRAL WITH AIR HANDLING UNIT. SMOKE DETECTOR SHALL BE CONNECTED AND MONITORED BY THE EXISTING BUILDING FIRE ALARM SYSTEM.
3. GFCI CONVENIENCE RECEPTACLE WITH WATER PROOF COVER TO BE INSTALLED 36" ABOVE ROOF LEVEL.
4. EQUIPMENT SUPPLIED CONVENIENCE RECEPTACLE TO BE GFCI TYPE AND SHALL BE CONNECTED TO LINE SIDE OF THE EQUIPMENT DISCONNECT.





2 SH BUILDING ROOF LEVEL ELECTRICAL PLAN
SCALE: 3/16"=1'-0"

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS
Firm Registration No. 15868
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STATE OF TEXAS
CAMERON E. BROWN
0050337
LICENSED
PROFESSIONAL ENGINEER
[illegible]
3/19/2021

SODIUM HYPOCHLORITE BUILDING
ROOF LEVEL
ELECTRICAL PLAN

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

SH-E-102
SHEET NUMBER

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-81-E06, DATED MAY 2011.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING ELECTRICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
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5. CONTRACTOR IS RESPONSIBLE TO EVALUATE EXISTING LIGHTNING PROTECTION SYSTEM TO MAKE SURE ANY NEW EQUIPMENT INSTALLED IS PROTECTED. COORDINATE INSTALLATION OF LIGHTNING PROTECTION WITH INSTALLATION OF OTHER BUILDING SYSTEMS AND COMPONENTS. REFER TO SPECIFICATIONS SECTION 16670 FOR GENERAL LIGHTNING PROTECTION SYSTEM REQUIREMENTS.

KEYED NOTES

(1) NEW LOADS TO BE CONNECTED TO THIS PANEL. REFER TO SHEET SH-E-101 AND SH-E-102 FOR LOAD LOCATIONS. REFER TO SHEET E-631 FOR BREAKER POSITION AND SIZE.

SODIUM HYPOCHLORITE BUILDING - EQUIPMENT ARRANGEMENT PLAN
SCALE: 3/8" = 1'-0"

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CITY of AUSTIN
HANDCOX WATER TREATMENT PLANT
HVAC IMPROVEMENTS PROJECT
6800 N. FM 620, AUSTIN, TEXAS 78726

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS
Firm Registration No. 15960
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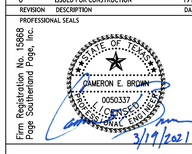


SODIUM HYPOCHLORITE BUILDING - EQUIPMENT ARRANGEMENT PLAN

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

SH-E-103
SHEET NUMBER

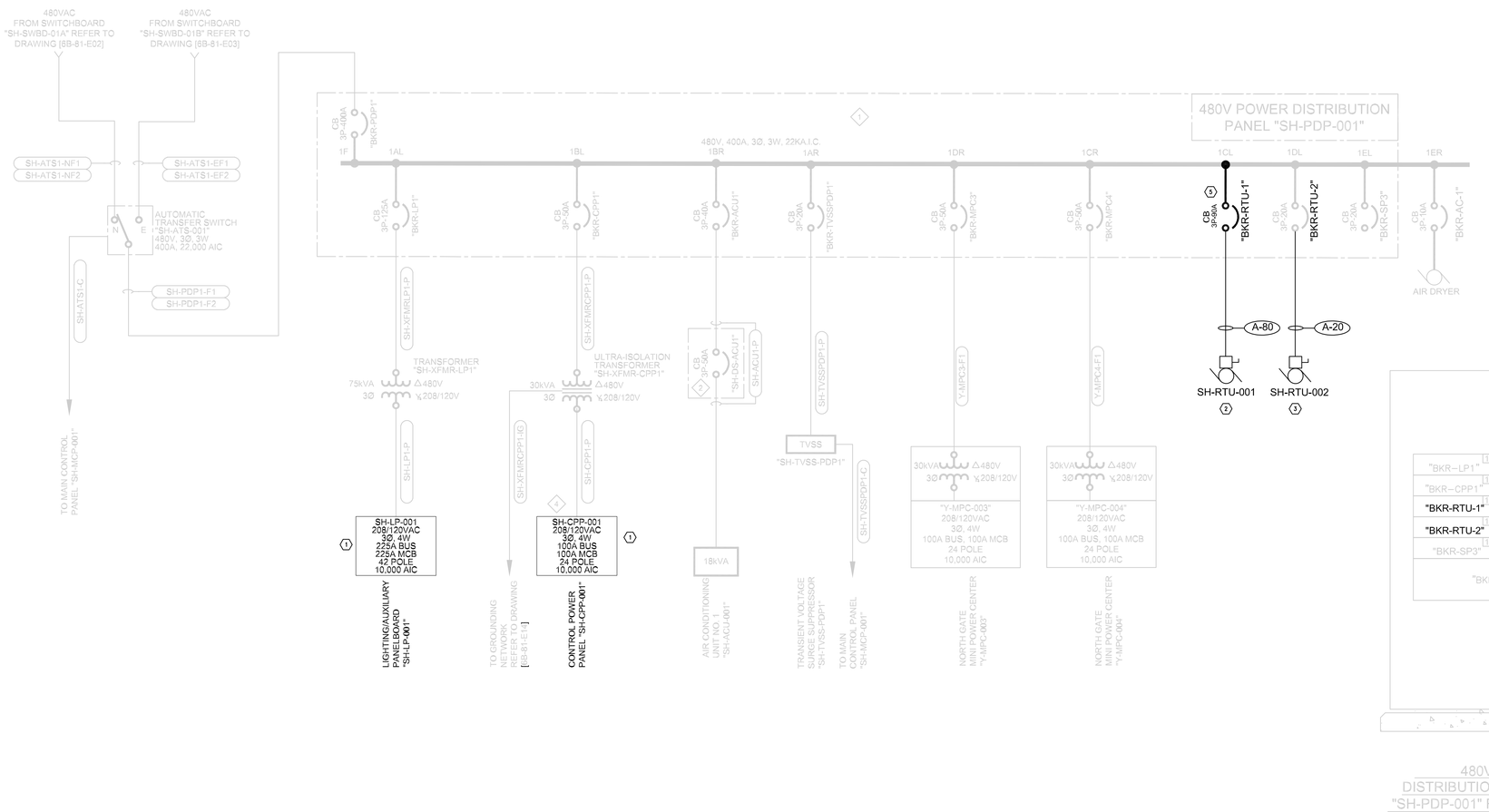
7/31/2020 7:15:45 AM

GENERAL NOTES

1. THIS DRAWING IS BASED ON EXISTING DRAWING 6B-81-E04, DATED MAY 2011.
2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE AREAS WHICH ARE BEING RENOVATED WHILE PREPARING THE BID. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING ELECTRICAL ITEMS AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS AND OR DISCREPANCIES THAT WOULD KEEP THE CONTRACTOR FROM COMPLETING THE DESIGN SHOWN ON THE CONTRACT DRAWINGS.
3. COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION.
4. NEW CIRCUIT BREAKERS NEED TO MATCH THE EXISTING PANELBOARD MANUFACTURER AND KAIC RATING.

KEYED NOTES

1. NEW LOADS TO BE CONNECTED TO THIS PANEL. REFER TO SHEET SH-E-101 FOR LOAD LOCATIONS. REFER TO SHEET E-631 FOR BREAKER SIZE AND LOCATIONS.
2. NEW 30 TON ROOF TOP HVAC UNIT, SH-RTU-001. REFER TO DRAWING SH-E-102 FOR LOAD LOCATIONS.
3. NEW 5 TON ROOFTOP HVAC UNIT, SH-RTU-002. REFER TO DRAWING SH-E-102 FOR LOAD LOCATIONS.
4. CONTRACTOR TO PROVIDE NEW 90A, 480V, 3P, CIRCUIT BREAKER TO REPLACE EXISTING SPARE 50A CIRCUIT BREAKER. CONTRACTOR TO GIVE SPARE BREAKER BACK TO OWNER FOR LATER USE.



SH-CPP-001

LOAD TYPE	DEMAND LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	NOTES
EXISTING (METERED)	10.003	1.25	12.50375	PER NEC 220.87.1
NEW	3.228	1	3.228	
		TOTAL (KVA)	15.73175	PER NEC 220.87.2 THE NEW LOAD PLUS THE TOTAL DEMAND DOES NOT EXCEED THE AMPACITY OF THE FEEDER OR RATING OF THE SERVICE
		TOTAL (A)	43.7	
		CAPACITY (A)	100.0	NEW TOTAL LOAD REPRESENTS 54.58% OF TOTAL ALLOWABLE LOAD

SH-LP-001

LOAD TYPE	DEMAND LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	NOTES
EXISTING	32.804	1.25	41.005	EXISTING PANELBOARD DEMAND LOAD BASED ON ORIGINAL PANELBOARD DESIGN LOADS
NEW	8.14	1	8.14	
		TOTAL (KVA)	49.1	PER NEC 220.87.2 THE NEW LOAD PLUS THE TOTAL DEMAND DOES NOT EXCEED THE AMPACITY OF THE FEEDER OR RATING OF THE SERVICE
		TOTAL (A)	136.4	
		CAPACITY (A)	225.0	NEW TOTAL LOAD REPRESENTS 75.78% OF TOTAL ALLOWABLE LOAD

SH-PDP-001

LOAD TYPE	DEMAND LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	NOTES
EXISTING	113.134	1.25	141.4169108	UNKNOWN LOADS CALCULATED BASED UPON 80% OF RATED CIRUIT BREAKER LOAD.
NEW	69.504	1	69.50	
		TOTAL (KVA)	210.9	PER NEC 220.87.2 THE NEW LOAD PLUS THE TOTAL DEMAND DOES NOT EXCEED THE AMPACITY OF THE FEEDER OR RATING OF THE SERVICE
		TOTAL (A)	253.7	
		CAPACITY (A)	400.0	NEW TOTAL LOAD REPRESENTS 79.28% OF TOTAL ALLOWABLE LOAD

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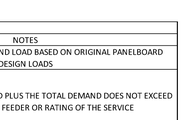
REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

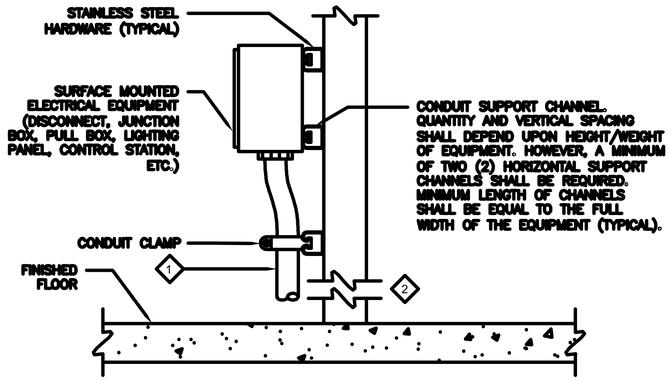
PROFESSIONAL SEALS
Firm Registration No. 15682 Page Southerland Page, Inc



ELECTRICAL ONE-LINE DIAGRAM
SODIUM HYPOCHLORITE BUILDING

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

SH-E-601
SHEET NUMBER

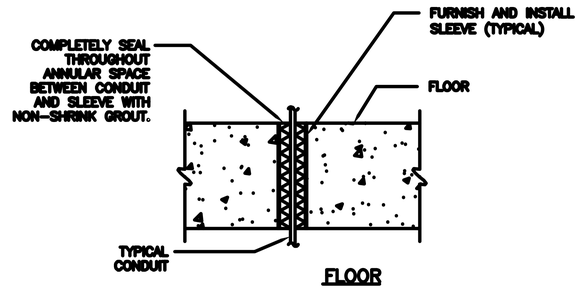


KEY NOTES

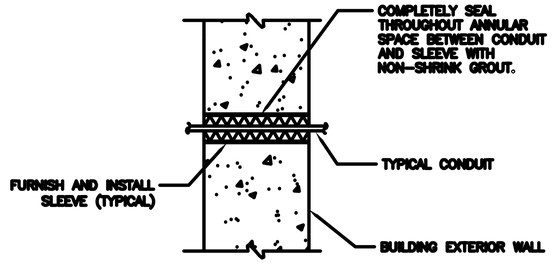
1. CONDUIT/WIRE CONTINUES AS SHOWN ON PLAN DRAWINGS. FURNISH AND INSTALL CONDUIT SEAL WHERE REQUIRED ON DRAWINGS.
2. THE STRUCTURE TYPE TO WHICH EQUIPMENT AND/OR SUPPORT SYSTEMS SHALL BE MOUNTED MAY VARY. THE EQUIPMENT ANCHOR TYPE SHALL CORRESPOND TO THE TYPE OF STRUCTURE TO WHICH THE EQUIPMENT AND/OR SUPPORT SYSTEMS ARE ATTACHED. THE DRAWING REFLECTS A SPECIFIC STRUCTURE TYPE WITH CORRESPONDING ANCHOR TYPE AND IS TYPICAL FOR THE STRUCTURE TYPE SHOWN. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO PRE-CAST/CAST-IN-PLACE CONCRETE WALL/FLOOR SLAB STRUCTURE TYPES, FURNISH AND INSTALL BOLT WITH EPOXY INSERT ANCHOR. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO A CONCRETE MASONRY UNIT (CMU)/BRICK WALL STRUCTURE TYPE, FURNISH AND INSTALL BOLT WITH EXPANSION ANCHOR. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO STEEL STRUCTURE TYPE, FURNISH AND INSTALL BOLTING ASSEMBLY. COORDINATE ATTACHMENT REQUIREMENTS WITH STRUCTURAL AND SPECIFICATION SECTION 05120.

1 SURFACE/WALL MOUNTED EQUIPMENT INSTALLATION DETAIL

SCALE: NO SCALE



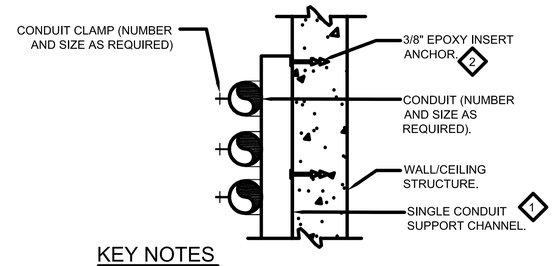
FLOOR



WALL

2 CONDUIT PENETRATION DETAILS

SCALE: NO SCALE

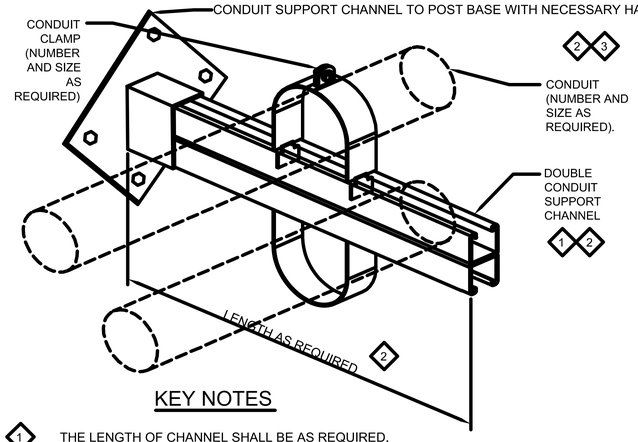


KEY NOTES

1. SINGLE CONDUIT SUPPORT CHANNEL. THE LENGTH OF CHANNEL SHALL BE AS REQUIRED.
2. THE STRUCTURE TYPE TO WHICH EQUIPMENT AND/OR SUPPORT SYSTEMS SHALL BE MOUNTED MAY VARY. THE EQUIPMENT ANCHOR TYPE SHALL CORRESPOND TO THE TYPE OF STRUCTURE TO WHICH THE EQUIPMENT AND/OR SUPPORT SYSTEMS ARE ATTACHED. THE DRAWING REFLECTS A SPECIFIC STRUCTURE TYPE WITH CORRESPONDING ANCHOR TYPE AND IS TYPICAL FOR THE STRUCTURE TYPE SHOWN. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO PRE-CAST/CAST-IN-PLACE CONCRETE WALL/FLOOR SLAB STRUCTURE TYPES, FURNISH AND INSTALL BOLT WITH EPOXY INSERT ANCHOR. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO A CONCRETE MASONRY UNIT (CMU)/BRICK WALL STRUCTURE TYPE, FURNISH AND INSTALL BOLT WITH EXPANSION ANCHOR. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO STEEL STRUCTURE TYPE, FURNISH AND INSTALL BOLTING ASSEMBLY. COORDINATE ATTACHMENT REQUIREMENTS WITH STRUCTURAL AND SPECIFICATION SECTION 05120.

3 WALL/CEILING CONDUIT SUPPORT DETAIL

SCALE: NO SCALE

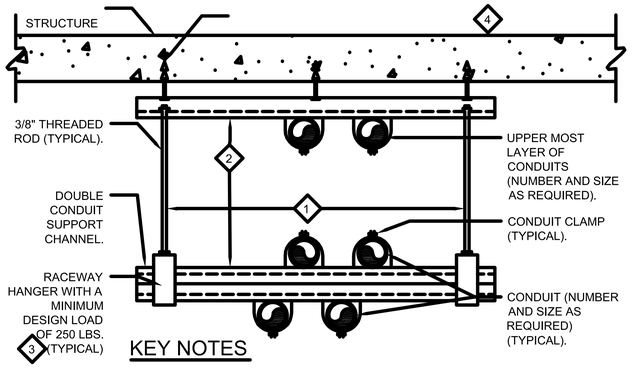


KEY NOTES

1. THE LENGTH OF CHANNEL SHALL BE AS REQUIRED.
2. COORDINATE/CALCULATE TOTAL WEIGHT LOAD OF ONDUIT/WIRE/CABLES/ETC. AT EACH LOCATION OF SUPPORT. FURNISH AND INSTALL ADDITIONAL SUPPORT AS NECESSARY AT EACH LOCATION, IN ORDER TO MAINTAIN A MAXIMUM OF 50 PERCENT OF MANUFACTURER'S STATED WEIGHT SUPPORT CAPACITY.
3. THE STRUCTURE TYPE TO WHICH EQUIPMENT AND/OR SUPPORT SYSTEMS SHALL BE MOUNTED MAY VARY. THE EQUIPMENT ANCHOR TYPE SHALL CORRESPOND TO THE TYPE OF STRUCTURE TO WHICH THE EQUIPMENT AND/OR SUPPORT SYSTEMS ARE ATTACHED. THE DRAWING REFLECTS A SPECIFIC STRUCTURE TYPE WITH CORRESPONDING ANCHOR TYPE AND IS TYPICAL FOR THE STRUCTURE TYPE SHOWN. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO PRE-CAST/CAST-IN-PLACE CONCRETE WALL/FLOOR SLAB STRUCTURE TYPES, FURNISH AND INSTALL BOLT WITH EPOXY INSERT ANCHOR. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO A CONCRETE MASONRY UNIT (CMU)/BRICK WALL STRUCTURE TYPE, FURNISH AND INSTALL BOLT WITH EXPANSION ANCHOR. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO STEEL STRUCTURE TYPE, FURNISH AND INSTALL BOLTING ASSEMBLY. COORDINATE ATTACHMENT REQUIREMENTS WITH STRUCTURAL AND SPECIFICATION SECTION 05120.

4 CONDUIT SUPPORT DETAIL

SCALE: NO SCALE

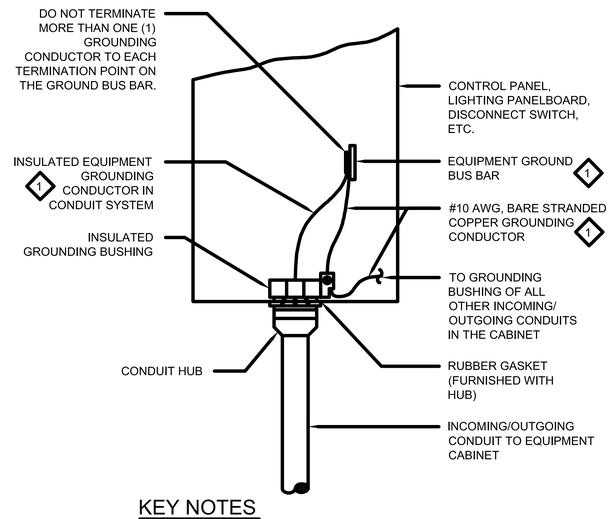


KEY NOTES

1. MAINTAIN MAXIMUM DISTANCE BETWEEN ADJACENT THREADED SUPPORT RODS OF 4'-0".
2. COORDINATE SUPPORT ROD LENGTH (AND CORRESPONDING CONDUIT/WIRE SUPPORT/RACK ELEVATION) WITH PLANS. SUPPORT ROD LENGTH MAY VARY.
3. COORDINATE/CALCULATE TOTAL WEIGHT LOAD OF CONDUIT/WIRE/CABLES/ETC. AT EACH LOCATION OF SUPPORT AND FURNISH AND INSTALL ADDITIONAL SUPPORT AS NECESSARY IN ORDER TO MAINTAIN A MAXIMUM OF 50 PERCENT OF MANUFACTURERS STATED WEIGHT SUPPORT CAPACITY.
4. THE STRUCTURE TYPE TO WHICH EQUIPMENT AND/OR SUPPORT SYSTEMS SHALL BE MOUNTED MAY VARY. THE EQUIPMENT ANCHOR TYPE SHALL CORRESPOND TO THE TYPE OF STRUCTURE TO WHICH THE EQUIPMENT AND/OR SUPPORT SYSTEMS ARE ATTACHED. THE DRAWING REFLECTS A SPECIFIC STRUCTURE TYPE WITH CORRESPONDING ANCHOR TYPE AND IS TYPICAL FOR THE STRUCTURE TYPE SHOWN. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO PRE-CAST/CAST-IN-PLACE CONCRETE WALL/FLOOR SLAB STRUCTURE TYPES, FURNISH AND INSTALL BOLT WITH EPOXY INSERT ANCHOR. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO A CONCRETE MASONRY UNIT (CMU)/BRICK WALL STRUCTURE TYPE, FURNISH AND INSTALL BOLT WITH EXPANSION ANCHOR. TO ATTACH EQUIPMENT/SUPPORT SYSTEMS TO STEEL STRUCTURE TYPE, FURNISH AND INSTALL BOLTING ASSEMBLY. COORDINATE ATTACHMENT REQUIREMENTS WITH STRUCTURAL AND SPECIFICATION SECTION 05120.

5 CONDUIT SUPPORT CEILING DETAIL

SCALE: NO SCALE



KEY NOTES

1. GROUND BUS BAR NOT NECESSARILY IN EXACT LOCATION SHOWN ON THIS DRAWING. GROUND BUS BAR DEPICTED IN THIS MANNER FOR PURPOSES OF CLARITY. CONTRACTOR SHALL FURNISH AND INSTALL SUFFICIENT LENGTH OF ALL GROUNDING CONDUCTORS TO ROUTE THROUGH DESIGNATED WIRING AREAS OF EQUIPMENT TO/FROM ACTUAL LOCATION OF EQUIPMENT GROUND BUS BAR.

6 CONDUIT TERMINATION FOR WALL/RACK MOUNTED OR STANDING EQUIPMENT

SCALE: NO SCALE

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

Firm Registration No. 15668
Page Southerland Page, Inc.

STATE OF TEXAS
CAMERON E. BROWN
00550337
LICENSED
PROFESSIONAL ENGINEER
3/19/2021

ELECTRICAL DETAILS

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

E-501
SHEET NUMBER

H.V.A.C. / EQUIPMENT CONNECTION SCHEDULE

MARK	EQUIPMENT DESCRIPTION	LOCATION	H.P.	KW	FLA	VOLT	PH.	WIRE SIZE (Note 3)	FED BY PNL. - CKT.	MOTOR CONTR./ VFD (NEMA 1 UON)	(Note 1)			D. S. AMP/ENCLOSURE (NEMA 1 UON)	(Note 1)		
											E	M	P		E	M	P
SH-RTU-001	ROOF TOP AIR HANDLING UNIT	SODIUM HYPOCHLORITE BUILDING - GENERATOR ROOM ROOF		53.6	71.6	480	3	A80	SH-PDP-001 - 1CL	INTEGRAL WITH EQUIPMENT			X	INTEGRAL WITH EQUIPMENT			X
SH-RTU-002	ROOF TOP AIR HANDLING UNIT	SODIUM HYPOCHLORITE BUILDING - MECHANICAL ROOM ROOF		9.0	12	480	3	A20	SH-PDP-001 - DL	NA				INTEGRAL WITH EQUIPMENT			X
SH-ACU-001	SPLIT-SYSTEM DX AIR CONDITIONING UNIT	SODIUM HYPOCHLORITE BUILDING - FEED ROOM		0.0	0.36	24 VDC		NOTE 4	SH-CPP-001 - 14,16	NA				NA			
SH-CU-001	SPLIT-SYSTEM DX AIR-COOLED CODENSING UNIT	SODIUM HYPOCHLORITE BUILDING - FEED ROOM ROOF		1.4	7.4	208	1	D25	SH-CPP-001 - 14,16	NA				30A/ NEMA 4X 316 SS	X		
SH-ACU-002	SPLIT-SYSTEM DX AIR CONDITIONING UNIT	SODIUM HYPOCHLORITE BUILDING - FEED ROOM		0.0	0.36	24 VDC		NOTE 4	SH-CPP-001 - 18,20	NA				NA			
SH-CU-002	SPLIT-SYSTEM DX AIR-COOLED CODENSING UNIT	SODIUM HYPOCHLORITE BUILDING - FEED ROOM ROOF		1.4	7.4	208	1	D25	SH-CPP-001 - 18,20	NA				30A/ NEMA 4X 316 SS	X		
SH-SSDC-001	SALT SYSTEM DUST COLLECTOR	SODIUM HYPOCHLORITE BUILDING - GROUND LEVEL	3		18.7	208	1	D25	SH-LP-001 - 24,26	INTEGRAL STARTER			X	INTEGRAL D.S./NEMA 4X 316 SS			X
SH-SSDC-002	SALT SYSTEM DUST COLLECTOR	SODIUM HYPOCHLORITE BUILDING - GROUND LEVEL	3		18.7	208	1	D25	SH-LP-001 - 39,41	INTEGRAL STARTER			X	INTEGRAL D.S./NEMA 4X 316 SS			X
FB1-ACU-001	SPLIT-SYSTEM DX AIR CONDITIONING UNIT	FILTER BUILDING - BLOWER ROOM		0.0	0.57	24 VDC		NOTE 4	FB1-CPP-001 - 21,23	NA				NA			
FB1-CU-001	SPLIT-SYSTEM DX AIR-COOLED CODENSING UNIT	FILTER BUILDING - GROUND LEVEL		1.7	9	208	1	D25	FB1-CPP-001 - 21,23	NA				30A/ NEMA 4X 316 SS	X		
CHE-EF-004	EXHAUST FAN	CHEMICAL BUILDING - FLC ROOM ROOF	0.25	0.6	5.8	120	1	E20	CH-LP-001 - 8	N/A				N/A			
CHE-EF-005	EXHAUST FAN	CHEMICAL BUILDING - FLC ROOM ROOF	0.25	0.6	5.8	120	1	E20	CH-LP-001 - 10	N/A				N/A			

SCHEDULE NOTES:

NOTE 1: E = ELECTRICAL CONTRACTOR TO PROVIDE
M = MECHANICAL CONTRACTOR TO PROVIDE
P = PROVIDED BY MANUFACTURER WITH EQUIPMENT

NOTE 2: FOR EQUIPMENT REQUIRING A NON-VFD MOTOR STARTER, FVNR TYPE STARTER SHALL BE PROVIDED, SUBJECT TO APPROVED EQUIPMENT SUBMITTALS. CONTRACTOR TO COORDINATE WITH ALL OTHER TRADES TO ENSURE THAT PROPER STARTER IS PROVIDED.

NOTE 3: REFER TO FEEDER SCHEDULE FOR WIRE SIZE DESIGNATION INFORMATION

NOTE 4: CONDUCTORS PROVIDED BY EQUIPMENT MANUFACTURER.

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REVISION HISTORY

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PROFESSIONAL SEALS

Firm Registration No. 15862
Page Southerland Page, Inc.

STATE OF TEXAS
CAMERON E. BROWN
0050537
LICENSED
PROFESSIONAL ENGINEER
3/19/2021

ELECTRICAL
HVAC CONNECTION SCHEDULE

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

E-621
SHEET NUMBER

THREE PHASE AND GROUND

DESIGNATION	LOAD (AMPS)	INSULATION TYPE	CONDUCTOR MATERIAL	PHASE WIRE SIZE	NUMBER OF PHASE CONDUCTORS	NEUTRAL WIRE SIZE	NUMBER OF NEUTRAL CONDUCTORS	EQUIPMENT GROUND SIZE	CONDUIT TYPE	CONDUIT SIZE	NUMBER OF PARALLEL RUNS
A15	15	THHN	COPPER	12	3		0	12	EMT	3/4"	1
A20	20	THHN	COPPER	12	3		0	12	EMT	3/4"	1
A25	25	THHN	COPPER	10	3		0	10	EMT	3/4"	1
A30	30	THHN	COPPER	10	3		0	10	EMT	3/4"	1
A35	35	THHN	COPPER	8	3		0	10	EMT	3/4"	1
A40	40	THHN	COPPER	8	3		0	10	EMT	3/4"	1
A45	45	THHN	COPPER	6	3		0	10	EMT	3/4"	1
A50	50	THHN	COPPER	6	3		0	10	EMT	3/4"	1
A55	55	THHN	COPPER	6	3		0	10	EMT	3/4"	1
A60	60	THHN	COPPER	4	3		0	10	EMT	1"	1
A70	70	THHN	COPPER	4	3		0	8	EMT	1"	1
A80	80	THHN	COPPER	3	3		0	8	EMT	1"	1
A90	90	THHN	COPPER	3	3		0	8	EMT	1"	1
A100	100	THHN	COPPER	2	3		0	8	EMT	1-1/4"	1
A110	110	THHN	COPPER	2	3		0	6	EMT	1-1/4"	1
A125	125	THHN	COPPER	1	3		0	6	EMT	1-1/4"	1
A150	150	THHN	COPPER	1/0	3		0	6	EMT	1-1/2"	1
A175	175	THHN	COPPER	2/0	3		0	6	EMT	1-1/2"	1
A200	200	THHN	COPPER	3/0	3		0	6	EMT	2"	1
A225	225	THHN	COPPER	4/0	3		0	4	EMT	2"	1
A250	250	THHN	COPPER	250	3		0	4	EMT	2"	1
A300	300	THHN	COPPER	350	3		0	4	EMT	2-1/2"	1
A350	350	THHN	COPPER	500	3		0	3	EMT	3"	1
A400	400	THHN	COPPER	4/0	3		0	3	EMT	2"	2
A500	500	THHN	COPPER	250	3		0	2	EMT	2"	2
A600	600	THHN	COPPER	350	3		0	1	EMT	2-1/2"	2
A800	800	THHN	COPPER	300	3		0	1/0	EMT	2-1/2"	3
A1000	1000	THHN	COPPER	400	3		0	2/0	EMT	3"	3
A1200	1200	THHN	COPPER	350	3		0	3/0	EMT	3"	4
A1600	1600	THHN	COPPER	400	3		0	4/0	EMT	3"	5
A2000	2000	THHN	COPPER	400	3		0	250	EMT	3"	6
A2500	2500	THHN	COPPER	500	3		0	350	EMT	3"	7
A3000	3000	THHN	COPPER	500	3		0	400	EMT	3"	8
A4000	4000	THHN	COPPER	600	3		0	500	EMT	3-1/2"	10

THREE PHASE, NEUTRAL AND GROUND

DESIGNATION	LOAD (AMPS)	INSULATION TYPE	CONDUCTOR MATERIAL	PHASE WIRE SIZE	NUMBER OF PHASE CONDUCTORS	NEUTRAL WIRE SIZE	NUMBER OF NEUTRAL CONDUCTORS	EQUIPMENT GROUND SIZE	CONDUIT TYPE	CONDUIT SIZE	NUMBER OF PARALLEL RUNS
B15	15	THHN	COPPER	12	3	12	1	12	EMT	3/4"	1
B20	20	THHN	COPPER	12	3	12	1	12	EMT	3/4"	1
B25	25	THHN	COPPER	10	3	10	1	10	EMT	3/4"	1
B30	30	THHN	COPPER	10	3	10	1	10	EMT	3/4"	1
B35	35	THHN	COPPER	8	3	8	1	10	EMT	3/4"	1
B40	40	THHN	COPPER	8	3	8	1	10	EMT	3/4"	1
B45	45	THHN	COPPER	6	3	6	1	10	EMT	1"	1
B50	50	THHN	COPPER	6	3	6	1	10	EMT	1"	1
B55	55	THHN	COPPER	6	3	6	1	10	EMT	1"	1
B60	60	THHN	COPPER	4	3	4	1	10	EMT	1-1/4"	1
B70	70	THHN	COPPER	4	3	4	1	8	EMT	1-1/4"	1
B80	80	THHN	COPPER	3	3	3	1	8	EMT	1-1/4"	1
B90	90	THHN	COPPER	2	3	2	1	8	EMT	1-1/4"	1
B100	100	THHN	COPPER	2	3	2	1	8	EMT	1-1/4"	1
B110	110	THHN	COPPER	2	3	2	1	6	EMT	1-1/4"	1
B125	125	THHN	COPPER	1	3	1	1	6	EMT	1-1/2"	1
B150	150	THHN	COPPER	1/0	3	1/0	1	6	EMT	1-1/2"	1
B175	175	THHN	COPPER	2/0	3	2/0	1	6	EMT	2"	1
B200	200	THHN	COPPER	3/0	3	3/0	1	6	EMT	2"	1
B225	225	THHN	COPPER	4/0	3	4/0	1	4	EMT	2-1/2"	1
B250	250	THHN	COPPER	250	3	250	1	4	EMT	2-1/2"	1
B300	300	THHN	COPPER	350	3	350	1	4	EMT	3"	1
B350	350	THHN	COPPER	500	3	500	1	3	EMT	3"	1
B400	400	THHN	COPPER	3/0	3	3/0	1	3	EMT	2"	2
B500	500	THHN	COPPER	250	3	250	1	2	EMT	2-1/2"	2
B600	600	THHN	COPPER	350	3	350	1	1	EMT	3"	2
B800	800	THHN	COPPER	300	3	300	1	1/0	EMT	3"	3
B1000	1000	THHN	COPPER	400	3	400	1	2/0	EMT	3"	3
B1200	1200	THHN	COPPER	350	3	350	1	3/0	EMT	3"	4
B1600	1600	THHN	COPPER	400	3	400	1	4/0	EMT	3"	5
B2000	2000	THHN	COPPER	400	3	400	1	250	EMT	3"	6
B2500	2500	THHN	COPPER	500	3	500	1	350	EMT	3-1/2"	7
B3000	3000	THHN	COPPER	500	3	500	1	400	EMT	3-1/2"	8
B4000	4000	THHN	COPPER	600	3	4/0	2	500	EMT	3-1/2"	10

THREE PHASE, 200% NEUTRAL AND GROUND

DESIGNATION	LOAD (AMPS)	INSULATION TYPE	CONDUCTOR MATERIAL	PHASE WIRE SIZE	NUMBER OF PHASE CONDUCTORS	NEUTRAL WIRE SIZE	NUMBER OF NEUTRAL CONDUCTORS	EQUIPMENT GROUND SIZE	CONDUIT TYPE	CONDUIT SIZE	NUMBER OF PARALLEL RUNS
C100	100	THHN	COPPER	2	3	3/0	1	6	EMT	1-1/2"	1
C110	110	THHN	COPPER	1	3	4/0	1	4	EMT	2"	1
C125	125	THHN	COPPER	1/0	3	250	1	4	EMT	2"	1
C150	150	THHN	COPPER	2/0	3	350	1	4	EMT	2"	1
C175	175	THHN	COPPER	3/0	3	4/0	2	4	EMT	2-1/2"	1
C200	200	THHN	COPPER	4/0	3	4/0	2	4	EMT	2-1/2"	1
C225	225	THHN	COPPER	250	3	4/0	2	2	EMT	2-1/2"	1
C250	250	THHN	COPPER	300	3	250	2	2	EMT	3"	1
C300	300	THHN	COPPER	400	3	350	2	2	EMT	3"	1
C350	350	THHN	COPPER	4/0	3	4/0	2	2	EMT	2-1/2"	2
C400	400	THHN	COPPER	4/0	3	4/0	2	2	EMT	2-1/2"	2
C500	500	THHN	COPPER	300	3	250	2	1/0	EMT	3"	2
C600	600	THHN	COPPER	400	3	350	2	2/0	EMT	3-1/2"	2
C800	800	THHN	COPPER	400	3	250	2	3/0	EMT	3"	3
C1000	1000	THHN	COPPER	500	3	400	2	4/0	EMT	3-1/2"	3
C1200	1200	THHN	COPPER	400	3	350	2	250	EMT	3-1/2"	4

TWO WIRE, NEUTRAL AND GROUND

DESIGNATION	LOAD (AMPS)	INSULATION TYPE	CONDUCTOR MATERIAL	PHASE WIRE SIZE	NUMBER OF PHASE CONDUCTORS	NEUTRAL WIRE SIZE	NUMBER OF NEUTRAL CONDUCTORS	EQUIPMENT GROUND SIZE	CONDUIT TYPE	CONDUIT SIZE	NUMBER OF PARALLEL RUNS
E15	15	THHN	COPPER	12	2	12	1	12	EMT	3/4"	1
E20	20	THHN	COPPER	12	2	12	1	12	EMT	3/4"	1
E25	25	THHN	COPPER	10	2	10	1	10	EMT	3/4"	1
E30	30	THHN	COPPER	10	2	10	1	10	EMT	3/4"	1
E35	35	THHN	COPPER	8	2	8	1	10	EMT	3/4"	1
E40	40	THHN	COPPER	8	2	8	1	10	EMT	3/4"	1
E45	45	THHN	COPPER	6	2	6	1	10	EMT	3/4"	1
E50	50	THHN	COPPER	6	2	6	1	10	EMT	3/4"	1
E55	55	THHN	COPPER	6	2	6	1	10	EMT	3/4"	1
E60	60	THHN	COPPER	4	2	4	1	10	EMT	1"	1
E70	70	THHN	COPPER	4	2	4	1	8	EMT	1"	1
E80	80	THHN	COPPER	3	2	3	1	8	EMT	1"	1
E90	90	THHN	COPPER	2	2	2	1	8	EMT	1-1/4"	1
E100	100	THHN	COPPER	2	2	2	1	8	EMT	1-1/4"	1
E110	110	THHN	COPPER	2	2	2	1	6	EMT	1-1/4"	1
E125	125	THHN	COPPER	1	2	1	1	6	EMT	1-1/4"	1

SECONDARY FEEDER FOR K-4 RATED TRANSFORMER (120V/208V)

XFMR RATING	DESIGNATION	LOAD (AMPS)	INSULATION TYPE	CONDUCTOR MATERIAL	PHASE WIRE SIZE	NUMBER OF PHASE CONDUCTORS	NEUTRAL WIRE SIZE	NUMBER OF NEUTRAL CONDUCTORS	GROUNDING ELECTRODE CONDUCTOR	CONDUIT TYPE	CONDUIT SIZE	NUMBER OF PARALLEL RUNS
15 KVA	T60	60	THHN	COPPER	4	3	4	1	8	EMT	1-1/4"	1
30 KVA	T100	100	THHN	COPPER	3	3	3	1	8	EMT	1-1/4"	1
45 KVA	T150	150	THHN	COPPER	1/0	3	1/0	1	6	EMT	1-1/2"	1
75 KVA	T300	300	THHN	COPPER	350	3	350	1	2	EMT	3"	1
112.5 KVA	T400	400	THHN	COPPER	3/0	3	3/0	1	1/0	EMT	2"	2
150 KVA	T600	600	THHN	COPPER	350	3	350	1	2/0	EMT	3"	2
225 KVA	T800	800	THHN	COPPER	600	3	600	1	3/0	EMT	3-1/2"	2
300 KVA	T1000	1000	THHN	COPPER	400	3	400	1	3/0	EMT	3"	3

SECONDARY FEEDER FOR K-13 RATED TRANSFORMER (120V/208V)

XFMR RATING	DESIGNATION	LOAD (AMPS)	INSULATION TYPE	CONDUCTOR MATERIAL	PHASE WIRE SIZE	NUMBER OF PHASE CONDUCTORS	NEUTRAL WIRE SIZE	NUMBER OF NEUTRAL CONDUCTORS	GROUNDING ELECTRODE CONDUCTOR	CONDUIT TYPE	CONDUIT SIZE	NUMBER OF PARALLEL RUNS
15 KVA	TK60	60	THHN	COPPER	3	3	1	1	6	EMT	1-1/4"	1
30 KVA	TK100	100	THHN	COPPER	1	3	3/0	1	4	EMT	2"	1
45 KVA	TK150	150	THHN	COPPER	2/0	3	2/0	2	4	EMT	2"	1
75 KVA	TK300	300	THHN	COPPER	400	3	400	2	1/0	EMT	3-1/2"	1
112.5 KVA	TK400	400	THHN	COPPER	4/0	3	4/0	2	1/0	EMT	2-1/2"	2
150 KVA	TK600	600	THHN	COPPER	400	3	400	2	2/0	EMT	3-1/2"	2
225 KVA	TK800	800	THHN	COPPER	350	3	350	2	3/0	EMT	3"	3
300 KVA	TK1000	1000	THHN	COPPER	500	3	500	2	3/0	EMT	3-1/2"	3

TWO WIRE AND GROUND

DESIGNATION	LOAD (AMPS)	INSULATION TYPE	CONDUCTOR MATERIAL	WIRE SIZE	NUMBER OF NEUTRAL CONDUCTORS	EQUIPMENT GROUND SIZE	CONDUIT TYPE	CONDUIT SIZE	NUMBER OF PARALLEL RUNS
D15	15	THHN	COPPER	12	2	12	EMT	3/4"	1
D20	20	THHN	COPPER	12	2	12	EMT	3/4"	1
D25	25	THHN	COPPER	10	2	10	EMT	3/4"	1
D30	30	THHN	COPPER	10	2	10	EMT	3/4"	1
D35	35	THHN	COPPER	8	2	10	EMT	3/4"	1
D40	40	THHN	COPPER	8	2	10	EMT	3/4"	1
D45	45	THHN	COPPER	6	2	10	EMT	3/4"	1
D50	50	THHN	COPPER	6	2	10	EMT	3/4"	1
D55	55	THHN	COPPER	6	2	10	EMT	3/4"	1
D60	60	THHN	COPPER	4	2	10	EMT	3/4"	1
D70	70	THHN	COPPER	4	2	8	EMT	3/4"	1
D80	80	THHN	COPPER	3	2	8	EMT	1"	1
D90	90	THHN	COPPER	2	2	8	EMT	1"	1
D100	100	THHN	COPPER	2	2	8	EMT	1"	1
D110	110	THHN	COPPER	2	2	6	EMT	1"	1
D125	125	THHN	COPPER	1	2	6	EMT	1-1/4"	1

Page

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS
Firm Registration No. 15868
Page Southerland Page, LLC

STATE OF TEXAS
CAMERON E. BROWN
0050337
LICENSED
PROFESSIONAL ENGINEER
3/19/2021

ELECTRICAL
FEEDER SCHEDULES

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

E-622
SHEET NUMBER

CIRCUIT BREAKER PANEL SCHEDULE - "CH-LP-001"

VOLTS: 208/120 V BUS AMPS: 225 A MAIN: 225 A PHASE/WIRE: 3Φ 4W

CONDUIT/WIRE DESCRIPTION	CKT BKR SIZE	CKT. NO.	LOAD DESCRIPTIONS	PHASE A	PHASE B	PHASE C	LOAD DESCRIPTIONS	CKT. NO.	CKT BKR SIZE	CONDUIT/WIRE DESCRIPTION
1"- 2#10(P), 1#10(G)	20 A 1 P	1	CHEMICAL FEED PUMP CONTROL PANEL "CH-CP- CHFP101"	600 1920			EXHAUST FAN "CH-EF-001"	2	20 A 1 P	3/4"- 2#10(P), 1#10(G)
1"- 2#10(P), 1#10(G)	20 A 1 P	3	CHEMICAL FEED PUMP CONTROL PANEL "CH-CP- CHFP102"		1080 1920		EXHAUST FAN "CH-EF-002"	4	20 A 1 P	1-1/2"- 4#10(P), 2#10(G)
1"- 2#10(P), 1#10(G)	20 A 1 P	5	CHEMICAL FEED PUMP CONTROL PANEL "CH-CP- CHFP103"			1080 1920	EXHAUST FAN "CH-EF-003"	6	20 A 1 P	1-1/2"- 4#10(P), 2#10(G)
1"- 2#10(P), 1#10(G)	20 A 1 P	7	CHEMICAL FEED PUMP CONTROL PANEL "CH-CP- CHFP201"	**696** 1176			**EXHAUST FAN "CHE-EF-004"**	8	20 A 1 P	**1-1/2"-4#12(P),2#12(G)**
1"- 2#10(P), 1#10(G)	20 A 1 P	9	CHEMICAL FEED PUMP CONTROL PANEL "CH-CP- CHFP202"		**696** 1176		**EXHAUST FAN "CHE-EF-005"**	10	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 8
1"- 2#10(P), 1#10(G)	20 A 1 P	11	CHEMICAL FEED PUMP CONTROL PANEL "CH-CP- CHFP301"			1080 1656	EXHAUST FAN "CH-EF-006"	12	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 6
1"- 2#10(P), 1#10(G)	20 A 1 P	13	CHEMICAL FEED PUMP CONTROL PANEL "CH-CP- CHFP302"	1080 1656			EXHAUST FAN "CH-EF-007"	14	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 4
1"- 2#10(P), 1#10(G)	20 A 1 P	15	TELEPHONE PANEL "CH-CP-TEL"		1260 0		RECEPTACLES, SOUTH SIDE	16	20 A 1 P	1-1/2"- 6#10(P), 1#10(G)
3/4"-2#10(P), 1#10(G)	20 A 1 P	17	EXIT, EMERGENCY/EGRESS LIGHTING			1080 200	RECEPTACLES, NORTH SIDE	18	20 A 1 P	1-1/2"- 6#10(P), 1#10(G)
3/4" - 2#10(P),1#10(G)	20 A 1 P	19	PHOTOCELL	750 100			LIGHTING/RECEPTACLES ON TANK PLATFORMS	20	20 A 1 P	1-1/2"- 2#10(P), 1#10(G)
1" - 4#8(P),1#8(G)	40 A 3 P	21	LIGHTING CONTACTOR "CH-LC- 001"		1505 3496		LIGHTING, SHMP	22	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 18
		23				1320 4055	LIGHTING, FLC	24	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 18
		25		1140 2911			LIGHTING, FS WALKWAY	26	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 16
	20 A 1 P	27	SPARE		1295 0		LIGHTING, FS TANKS	28	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 16
	20 A 1 P	29	SPARE			1260 0	LIGHTING, ELECTRICAL ROOM AND COMPRESSOR ROOM	30	20 A 1 P	3/4" - 6#10(P), 1#10(G)
	20 A 1 P	31	SPARE	1200 0			LIGHTING, ELECTRICAL ROOM	32	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 30
	20 A 1 P	33	SPARE		0 0		SPARE	34	20 A 1 P	
	20 A 1 P	35	SPARE			360 0	"CH-MCP-001" RECEPTACLES	36	20 A 1 P	3/4" - 6#10(P), 3#10(G)
	20 A 1 P	37	SPARE	150 0			"CH-MCP-001" FANS	38	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 36
	20 A 1 P	39	SPARE		240 0		"CH-MCP-001" LIGHTS	40	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 36
	20 A 1 P	41	SPARE			360 0	ELECTRICAL ROOM ROOF MOUNTED RECEPTACLE	42	20 A 1 P	3/4" - 6#10(P), 3#10(G)
TOTAL CONNECTED VOLT AMPS (VA)				**13379**	**12668**	14371				

CIRCUIT BREAKER PANEL SCHEDULE - "FB1-CPP-001"

VOLTS: 208/120 V BUS AMPS: 100 A MAIN: 100 A PHASE/WIRE: 3Φ 4W

CONDUIT/WIRE DESCRIPTION	CKT BKR SIZE	CKT. NO.	LOAD DESCRIPTIONS	PHASE A	PHASE B	PHASE C	LOAD DESCRIPTIONS	CKT. NO.	CKT BKR SIZE	CONDUIT/WIRE DESCRIPTION
1"-6#10(P), 3#10(G), 3#10(IG)	20 A 1 P	1	UNINTERRUPTIBLE POWER SUPPLY "FB1-UPS-LCP1"	1000 1000			UNINTERRUPTIBLE POWER SUPPLY "FB1-UPS-LCP2"	2	20 A 1 P	1"-6#10(P), 3#10(G), 3#10(IG)
INCLUDED IN CONDUIT WITH CIRCUIT NO. 1	20 A 1 P	3	UNINTERRUPTIBLE POWER SUPPLY "FB1-UPS-LCP3"		1000 1000		UNINTERRUPTIBLE POWER SUPPLY "FB1-UPS-LCP4"	4	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 2
INCLUDED IN CONDUIT WITH CIRCUIT NO. 1	20 A 1 P	5	UNINTERRUPTIBLE POWER SUPPLY "FB1-UPS-LCP5"			1000 1000	UNINTERRUPTIBLE POWER SUPPLY "FB1-UPS-LCP6"	6	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 2
1"-4#10, 2#10(G), 2#10(IG)	20 A 1 P	7	UNINTERRUPTIBLE POWER SUPPLY "FB1-UPS-OIU"	250 200			24VDC POWER SUPPLY "FB1-PS-LCP2A"	8	20 A 1 P	1"-6#10(P), 3#10(G), 3#10(IG)
1"-6#10(P), 3#10(G), 3#10(IG)	20 A 1 P	9	24VDC POWER SUPPLY "FB1-PS-LCP1A"		250 250		24VDC POWER SUPPLY "FB1-PS-LCP4A"	10	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 8
INCLUDED IN CONDUIT WITH CIRCUIT NO. 9	20 A 1 P	11	24VDC POWER SUPPLY "FB1-PS-LCP3A"			250 250	24VDC POWER SUPPLY "FB1-PS-LCP8A"	12	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 8
INCLUDED IN CONDUIT WITH CIRCUIT NO. 9	20 A 1 P	13	24VDC POWER SUPPLY "FB1-PS-LCP5A"	1050 250			UNINTERRUPTIBLE POWER SUPPLY "FB1-UPS-MCP1"	14	30 A 1 P	1"-6#10(P), 3#10(G), 3#10(IG)
3/4"-2#10(P), 1#10(G), 1#10(IG)	20 A 1 P	15	SECURITY PANEL "FB1-CP- SEC"		150 600		24VDC POWER SUPPLY "FB1-PS-MCP1"	16	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 14
INCLUDED IN CONDUIT WITH CIRCUIT NO. 7	20 A 1 P	17	24VDC POWER SUPPLY "FB1-PS-LCP0IUA"			0 50	SPARE CIRCUIT TO MAIN CONTROL PANEL "FB1-MCP-	18	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 14
	20 A 1 P	19	SPARE	51 0			INSTRUMENT POWER TO MAIN CONTROL PANEL "FB1-MCP-001"	20	20 A 1 P	1"-6#10(P), 3#10(G), 3#10(IG)
3/4"-2#10(P),1#10(G)	30A 2 P	**21** **23**	**FB1-ACU-001 / FB1-CU-001**		**18** **996**		INSTRUMENT POWER TO MAIN CONTROL PANEL "FB1-MCP-001"	22	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 20
						90 **996**	INSTRUMENT POWER TO MAIN CONTROL PANEL "FB1-MCP-001"	24	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 20
	20 A 1 P	25	SPARE	0 0			SPARE	26		
	20 A 1 P	27	SPARE		0 0			28	20 A 3 P	
	20 A 1 P	29	SPARE			0 0		30		
	0 A 1 P	31	SPACE	0 0			SPACE	32	0 A 1 P	
	0 A 1 P	33	SPACE		0 0		SPACE	34	0 A 1 P	
	0 A 1 P	35	SPACE			0 0	SPACE	36	0 A 1 P	
	0 A 1 P	37	SPACE	0 0			SPACE	38	0 A 1 P	
	0 A 1 P	39	SPACE		0 0		SPACE	40	0 A 1 P	
	0 A 1 P	41	SPACE			0 0	SPACE	42	0 A 1 P	
TOTAL CONNECTED VOLT AMPS (VA)				3801	**4264**	**3636**				

CIRCUIT BREAKER PANEL SCHEDULE - "FB1-LP-001"

VOLTS: 208/120 V BUS AMPS: 225 A MAIN: 150 A PHASE/WIRE: 3Φ 4W

CONDUIT/WIRE DESCRIPTION	CKT BKR SIZE	CKT. NO.	LOAD DESCRIPTIONS	PHASE A	PHASE B	PHASE C	LOAD DESCRIPTIONS	CKT. NO.	CKT BKR SIZE	CONDUIT/WIRE DESCRIPTION
	20 A 1 P	1	SPARE	600 0			EXHAUST FAN "FB1-EF-001"	2	15 A 1 P	3/4"-2#10(P), 1#10(G)
1"-2#10(P), 1#10(G)	20 A 1 P	3	SITE SECURITY SYSTEM DEVICES		120 0		EXHAUST FAN "FB1-EF-002"	4	15 A 1 P	3/4"-2#10(P), 1#10(G)
3/4"-2#10(P), 1#10(G)	20 A 1 P	5	ELECTRICAL AND MECHANICAL ROOM LIGHTING			780 1395	PIPE GALLERY BLOWER ROOM LIGHTING	6	20 A 1 P	3/4"-4#10(P), 1#10(G)
3/4"-2#10(P), 1#10(G)	20 A 1 P	7	TIE BUS "FB1-BD-MCC1A/B" SPACE HEATER	1300 250			PIPE GALLERY LIGHTING	8	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 6
3/4"-4#10(P), 1#10(G)	20 A 1 P	9	UPPER LEVEL EGRESS LIGHTING		1300 1035		PIPE GALLERY LIGHTING	10	20 A 1 P	3/4"-4#10(P), 1#10(G)
3/4"-6#10(P), 1#10(G)	20 A 1 P	11	FILTER GALLERY LIGHTING AND EXHAUST FAN "FB1-EF- 003"			585 1520	PIPE GALLERY LIGHTING	12	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 10
INCLUDED IN CONDUIT WITH CIRCUIT NO. 11	20 A 1 P	13	FILTER GALLERY LIGHTING	790 1170			PIPE GALLERY EGRESS LIGHTING	14	20 A 1 P	3/4"-2#10(P), 1#10(G)
1"-4#8(P), 1#8(G)	40 A 3 P	15	LIGHTING CONTACTOR "FB1- LC-001"		720 3390		ELECTRICAL AND MECHANICAL ROOM RECEPTACLES	16	20 A 1 P	3/4"-4#10(P), 1#10(G)
		17				940 3172	NORTH FILTER BASIN RECEPTACLES	18	20 A 1 P	3/4"-2#10(P), 1#10(G)
		19		720 2818			SOUTH FILTER BASIN RECEPTACLES	20	20 A 1 P	3/4"-2#10(P), 1#10(G)
3/4"-6#10(P), 1#10(G)	20 A 1 P	21	**PIPE GALLERY, BLOWER ROOM, AND EXTERIOR RECEPTACLES**		0 **1080**		SPARE	22	20 A 1 P	
INCLUDED IN CONDUIT WITH CIRCUIT NO. 21	20 A 1 P	23	PIPE GALLERY RECEPTACLES			0 720	SPARE	24	20 A 1 P	
INCLUDED IN CONDUIT WITH CIRCUIT NO. 21	20 A 1 P	25	PIPE GALLERY RECEPTACLES	720 940			MAIN CONTROL PANEL "FB1-MCP-001" AUXILIARY POWER	26	20 A 1 P	3/4"-6#10(P), 3#10(G)
INCLUDED IN CONDUIT WITH CIRCUIT NO. 26	20 A 1 P	27	MAIN CONTROL PANEL "FB1-MCP-001" LIGHTS		1440 500		FILTER GALLERY RECEPTACLES	28	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 16
INCLUDED IN CONDUIT WITH CIRCUIT NO. 26	20 A 1 P	29	MAIN CONTROL PANEL "FB1-MCP-001" FANS			300 500	CONTROL PANEL "FB1-LCP-001" LIGHTS, AUXILIARY POWER, AND FAN	30	20 A 1 P	1"-8#10(P), 4#10(G)
3/4"-6#10(P), 3#10(G)	20 A 1 P	31	CONTROL PANEL "FB1-LCP-002" LIGHTS, AUXILIARY POWER, AND FAN	300 300			CONTROL PANEL "FB1-LCP-003" LIGHTS, AUXILIARY POWER, AND FAN	32	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 30
INCLUDED IN CONDUIT WITH CIRCUIT NO. 31	20 A 1 P	33	CONTROL PANEL "FB1-LCP-004" LIGHTS, AUXILIARY POWER, AND FAN		300 300		CONTROL PANEL "FB1-LCP-005" LIGHTS, AUXILIARY POWER, AND FAN	34	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 30
INCLUDED IN CONDUIT WITH CIRCUIT NO. 31	20 A 1 P	35	CONTROL PANEL "FB1-LCP-006" LIGHTS, AUXILIARY POWER, AND FAN			300 300	CONTROL PANEL "FB1-LCP-OIU" LIGHTS, AUXILIARY POWER, AND FAN	36	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 30
3/4"-2#10(P), 1#10(G)	20 A 1 P	37	PHOTOCELL	1130 0			TURBIDIMETER DRAIN RECYCLE PUMP	38	20 A 1 P	1"-2#6(P), 1#10(G)
SEE CONDUIT "FB1- TSCL1-P"	20 A 1 P	39	TRUCK SCALE CONTROL PANEL "FB1-CP-TSCL1"		0 0		TELEPHONE PANEL "FB1-CP-TEL"	40	20 A 1 P	3/4"-2#10(P), 1#10(G)
	20 A 1 P	41	SPARE			0 0	SPARE	42	20 A 1 P	
TOTAL CONNECTED VOLT AMPS (VA)				11038	**10185**	10512				

CIRCUIT BREAKER PANEL SCHEDULE - "SH-CPP-001"

VOLTS: 208/120 V BUS AMPS: 100 A MAIN: 100 A PHASE/WIRE: 3Φ 4W

CONDUIT/WIRE DESCRIPTION	CKT BKR SIZE	CKT. NO.	LOAD DESCRIPTIONS	PHASE A	PHASE B	PHASE C	LOAD DESCRIPTIONS	CKT. NO.	CKT BKR SIZE	CONDUIT/WIRE DESCRIPTION
3/4"-2#10(P), 1#10(G)	20 A 1 P	1	SECURITY PANEL "SH-CP-SEC"	91 600			INSTRUMENT POWER TO MAIN CONTROL PANEL	2	20 A 1 P	1"- 6#10(P), 3#10(G)
1"-6#10(P), 3#10(G)	20 A 1 P	3	UNINTERRUPTIBLE POWER SUPPLY "SH-UPS-MCP1"		91 1116		INSTRUMENT POWER TO MAIN CONTROL PANEL	4	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 2
INCLUDED IN CONDUIT WITH CIRCUIT NO. 3	20 A 1 P	5	24VDC POWER SUPPLY "SH-PS-MCP1"			45 380	INSTRUMENT POWER TO MAIN CONTROL PANEL	5	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 2
INCLUDED IN CONDUIT WITH CIRCUIT NO. 3	20 A 1 P	7	SPARE CIRCUIT TO MAIN CONTROL PANEL "SH-MCP-	0 0			SPARE	8	20 A 1 P	
2#10(P), 1#10(G)	20 A 1 P	9	GENERATOR NO.1 CONTROL PANEL "SH-CP-GEN1"		0 1600		SPARE	10	20 A 1 P	
2#10(P), 1#10(G)	20 A 1 P	11	GENERATOR NO.2 CONTROL PANEL "SH-CP-GEN2"			2880 1600	GENERATOR SYSTEM MASTER CONTROL PANEL "SH-CP-GEN"	12	30 A 1 P	2#8(P), 1#10(G)
2#10(P), 1#10(G)	20 A 1 P	13	GENERATOR NO.3 CONTROL PANEL "SH-CP-GEN3"	**807** 1600			**SH-ACU-001/SH-CU-001**	**14** **16**	**30 A 2 P**	**3/4"-2#10(P), 1#10(G)**
1"-EMPTY	20 A 1 P	15	FUTURE GENERATOR NO. 4 CONTROL PANEL "SH-CP- GEN4"		**807** 0					
1"-EMPTY	20 A 1 P	17	FUTURE GENERATOR NO. 5 CONTROL PANEL "SH-CP- GEN5"			**807** 0	**SH-ACU-002/SH-CU-002**	**18** **20**	**30 A 2 P**	**3/4"-2#10(P), 1#10(G)**
1"EMPTY	20 A 1 P	19	FUTURE GENERATOR NO. 6 CONTROL PANEL "SH-CP- GEN6"	**807** 0						
	20 A 1 P	21	SPARE		0 0		SPARE	22	20 A 1 P	
	0 A 1 P	23	SPACE			0 0	SPACE	24	0 A 1 P	
	0 A 1 P	25	SPACE	0 0			SPACE	26	0 A 1 P	
	0 A 1 P	27	SPACE		0 0		SPACE	28	0 A 1 P	
	0 A 1 P	29	SPACE			0 0	SPACE	30	0 A 1 P	
TOTAL CONNECTED VOLT AMPS (VA)				**3905**	**3614**	**5712**				

CIRCUIT BREAKER PANEL SCHEDULE - "SH-LP-001"

VOLTS: 208/120 V BUS AMPS: 225 A MAIN: 225 A PHASE/WIRE: 3Φ 4W

CONDUIT/WIRE DESCRIPTION	CKT BKR SIZE	CKT. NO.	LOAD DESCRIPTIONS	PHASE A	PHASE B	PHASE C	LOAD DESCRIPTIONS	CKT. NO.	CKT BKR SIZE	CONDUIT/WIRE DESCRIPTION
1"-6#10(P), 3#10(G)	20 A 1 P	1	MAIN CONTROL PANEL "SH- MCP-001" LIGHTS	400 210			TELEPHONE PANEL "CEB-CP-TEL"	2	20 A 1 P	1"-2#10(P), 1#10(G)
INCLUDED IN CONDUIT WITH CIRCUIT NO. 1	20 A 1 P	3	MAIN CONTROL PANEL "SH- MCP-001" VENT FANS		876 400		EXHAUST FAN NO. 1 "SH-EF- 001"	4	20 A 1 P	1"-4#10(P), 2#10(G)
INCLUDED IN CONDUIT WITH CIRCUIT NO. 1	20 A 1 P	5	MAIN CONTROL PANEL "SH- MCP-001" AUXILIARY POWER			876 200	EXHAUST FAN NO. 2 "SH-EF- 002"	6	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO.4
1"-2#10(P), 1#10(G)	20 A 1 P	7	DISCHARGE MOTORIZED GLOBE VALVE	600 1008			EXHAUST FAN NO. 3 "SH-EF-003"	8	20 A 1 P	1"-4#10(P), 2#10(G)
1"-2#10(P), 1#10(G)	20 A 1 P	9	DISCHARGE MOTORIZED GLOBE VALVE		600 1008		EXHAUST FAN NO. 4 "SH-EF- 004"	10	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO.8
1"-2#10(P), 1#10(G)	20 A 1 P	11	DISCHARGE MOTORIZED GLOBE VALVE			1080 1008	EXHAUST FAN NO. 5 "SH-EF-005"	12	20 A 1 P	1"-6#10(P), 3#10(G)
1"-2#10(P), 1#10(G)	20 A 1 P	13	DISCHARGE MOTORIZED GLOBE VALVE	1080 1008			EXHAUST FAN NO. 6 "SH-EF- 006"	14	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 12
	20 A 1 P	15	SPARE		1080 0		EXHAUST FAN NO. 7 "SH-EF- 007"	16	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO. 12
3/4"-2#10(P), 1#10(G)	20 A 1 P	17	ROOF MOUNTED AIR UNIT "SH- ACU-001" RECEPTACLE			1080 180	EXHAUST FAN NO. 8 "SH-EF- 008"	18	20 A 1 P	3/4"-2#10(P), 1#10(G)
1"-4#8(P), 1#10(G)	60 A 3 P	19	LIGHTING CONTACTOR "SH-LC- 001" FOR BUILDING EXTERIOR LIGHTING	1080 1716			EXHAUST FAN NO. 9 "SH-EF- 009"	20	20 A 1 P	1"-4#10(P), 2#10(G)
		21			1080 1744		EXHAUST FAN NO. 10 "SH-EF- 010"	22	20 A 1 P	INCLUDED IN CONDUIT WITH CIRCUIT NO.20
		23				**1945** 1900	**SH-SSDC-001**	**24** **26**	**40 A 2 P**	**3/4"-2#10(P),1#10(G)**
1"-2#10(P), 1#10(G)	20 A 1 P	25	"SH-LC-001" LIGHTING CONTACTOR CONTROL PANEL	**1945** 100						
1"-2#10(P), 1#10(G)	20 A 1 P	27	RECEPTACLES IN 102 AND CORRIDOR		520 1440		BLOWER ROOM 104 LIGHTING	28	20 A 1 P	1"-2#10(P), 1#10(G)
1"-2#10(P), 1#10(G)	20 A 1 P	29	**RECEPTACLES IN ROOMS 103, 105, EXTERIOR AND ROOF**			1105 **1260**	LIGHTING IN ROOMS 102, 103 AND CORRIDOR	30	20 A 1 P	1"-2#10(P), 1#10(G)
1"-2#10(P), 1#10(G)	20 A 1 P	31	**RECEPTACLES IN GENERATOR ROOM 101 AND EXTERIOR**	1475 **900**			GENERATOR ROOM 101 - LIGHTING	32	20 A 1 P	1"-2#10(P), 1#10(G)
1"-2#10(P), 1#10(G)	20 A 1 P	33	RECEPTACLES IN GENERATOR ROOM		1180 720		GENERATOR ROOM 101 - LIGHTING	34	20 A 1 P	1"-2#10(P), 1#10(G)
1"-2#10(P), 1#10(G)	20 A 1 P	35	RECEPTACLES IN BLOWER ROOM 104			850 720	GENERATOR ROOM 101 - LIGHTING	36	20 A 1 P	1"-2#10(P), 1#10(G)
1"-2#10(P), 1#10(G)	20 A 1 P	37	RECEPTACLES ON EAST WALL OF GEN. RM. FOR PORTABLE ACID	590 720			BLOWER ROOM 104 - LIGHTING	38	20 A 1 P	1"-2#10(P), 1#10(G)
3/4"-2#10(P),1#10(G)	**40 A 2 P**	**39** **41**	**SH-SSDC-002**		**740** **1945**		FEED ROOM 105 - LIGHTING	40	20 A 1 P	1"-2#10(P), 1#10(G)
						830 **1945**	EMERGENCY EGRESS LIGHTING	42	20 A 1 P	1"-2#10(P), 1#10(G)
TOTAL CONNECTED VOLT AMPS (VA)				**12832**	**13333**	**14779**				

CIRCUIT BREAKER PANEL SCHEDULE - "SH-PDP-001"

VOLTS: 480 V BUS AMPS: 400 A MAIN: 400 A PHASE/WIRE: III 3W

CONDUIT/WIRE DESCRIPTION	CKT BKR SIZE	CKT. NO.	LOAD DESCRIPTIONS	PHASE A	PHASE B	PHASE C	LOAD DESCRIPTIONS	CKT. NO.	CKT BKR SIZE	CONDUIT/WIRE DESCRIPTION
1-1/2"-3 #2 (P),1 #1/0 (G	125A 3 P	1	SH-XFMR-LP1	4434 13528			SH-TVSS-1	2	20A 3 P	3/4"-3 #10 (P),1 #10 (G)
		3			4434 13528			4		
		5				4434 13528		6		
1"-3 #8 (P),1 #4 (G)	50 A 3 P	7	SH-XFMR-CPP1	6000 11085			SH-ACU-1	8	40 A 3 P	1"-3 #8 (P),1 #10 (G)
		9			6000 11085			10		
		11				6000 11085		12		
1"-3 #3 (P),1 #8 (G)	**90 A 3 P**	13	**SH-RTU-001**	3200 **19842**			Y-MPC-4	14	50 A 3 P	2"-3 #2 (P),1 #6 (G)
		15			3200 **19842**			16		
		17				3200 **19842**		18		
3/4"-3 #12 (P),1 #12 (G)	**20 A 3 P**	19	**SH-RTU-002**	3200 **3326**			Y-MPC-3	20	50 A 3 P	2"-3 #4/0 (P),1 #6 (G)
		21			3200 **3326**			22		
		23				2820 **3326**		24		
	20 A 3 P	25	SPARE	831 0			SH-AC-AIR-DRYER	26	10 A 3 P	NA
		27			831 0			28		
		29				831 0		30		
TOTAL CONNECTED VOLT AMPS (VA)				**65446**	**65446**	**65046**				

GENERAL NOTES

1. BREAKER SIZES SHOWN BOLD ARE NEW BREAKERS. PROVIDE BREAKERS THAT MATCH EXISTING PANELBOARD MANUFACTURER AND KAIC RATING.
2. BREAKER SIZES SHOWN GRAY WITH BOLDED LOADS ARE EXISTING SPARES TO BE RE-PURPOSED.

Page

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HVAC IMPROVEMENTS PROJECT
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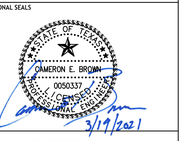
REVISION HISTORY

REVISION	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	19 MAR 2021

PROFESSIONAL SEALS

Firm Registration No. 15569
Page Southerland Page, Inc.



ELECTRICAL
PANELBOARD SCHEDULE

DRAWN BY	CHECKED BY
SJK	JJM
PROJECT NUMBER	PROJECT ABBREVIATION
119401	COA HWTP
ORIGINAL ISSUE	DATE
IFC	19 MAR 2021

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